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Teachers' Edition

# Investigating School Mathematics

Extending  
the Ideas

Accompanying  
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PHARES G. O'DAFFER

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The lessons in this EXTENDING THE IDEAS booklet offer new approaches to and extensions of mathematical concepts presented in the student text as well as introduction of new topics. The animal of each particular unit of the students text (Unit E, kangaroo) is often used in an example or in the first exercise to show the child what to do on each page.

Brief mathematical explanations and teaching suggestions are given at the top of each page. A table of contents and correlation with the student text pages are given on the inside back cover.

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Illustrations by Susan Gilmour

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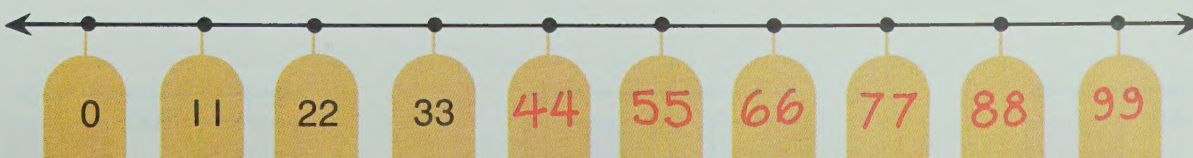
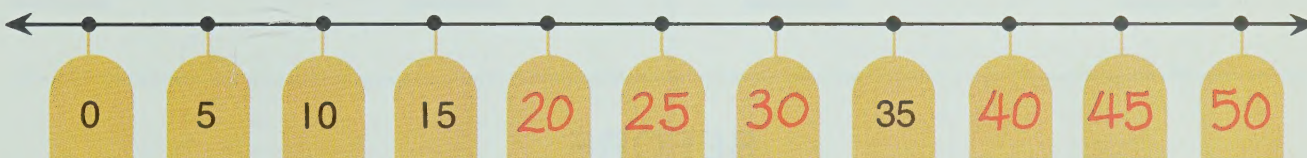
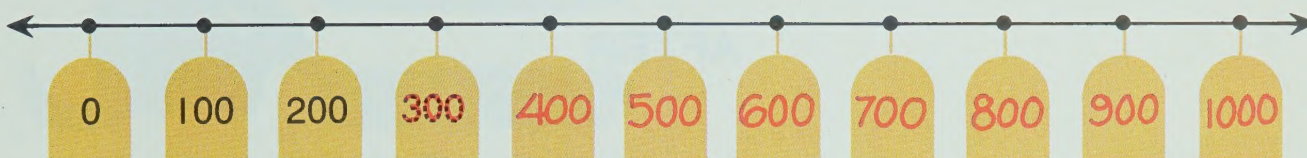
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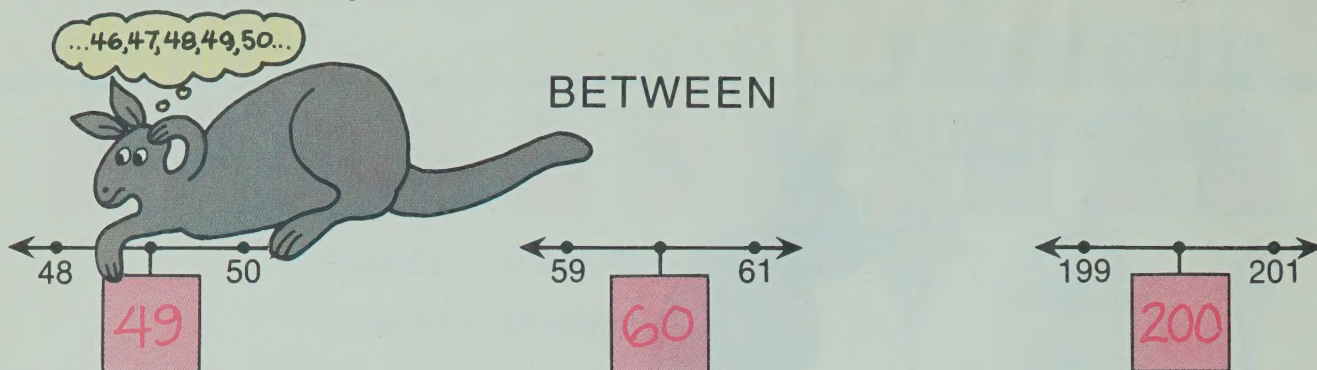
If the child can count from 1 through 9, he can easily find a pattern to count by tens and then by hundreds. By the same token, he can count by fifties if he has figured out how to count by fives.

Write the missing numerals.

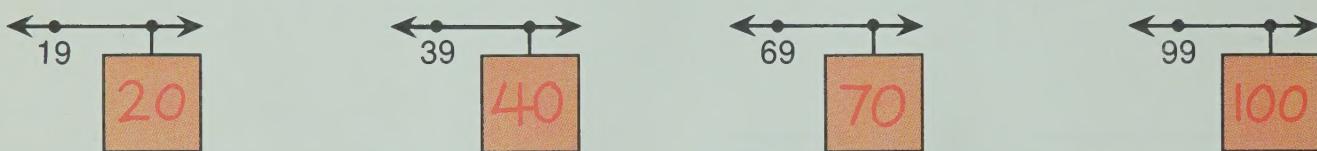




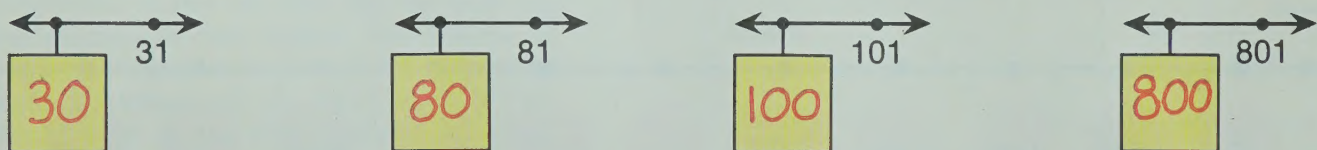
Give the missing numerals.



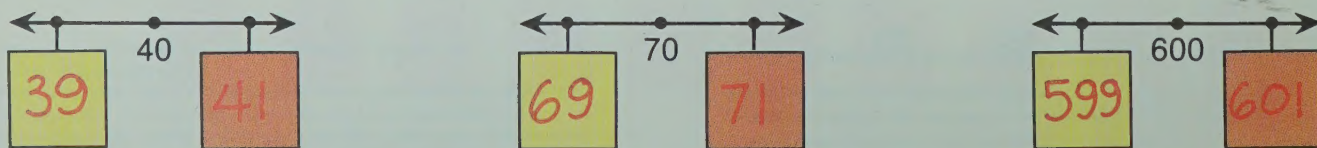
AFTER




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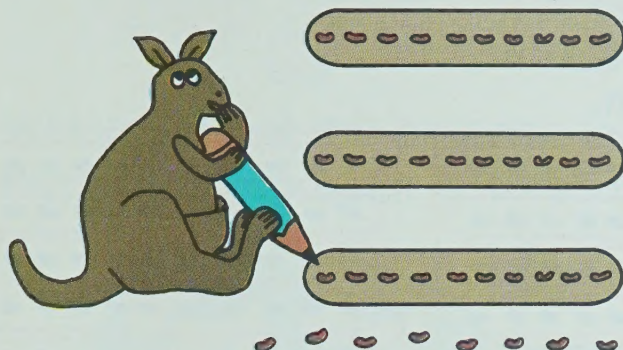
BEFORE and AFTER



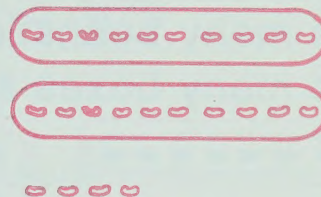


Show the number of beans by drawing beansticks  and extra beans. Use as many beansticks as you can.

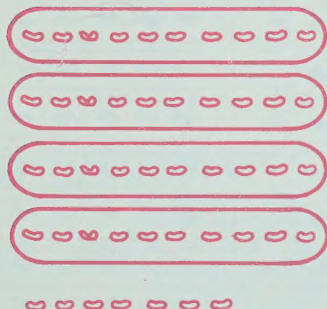
38 BEANS



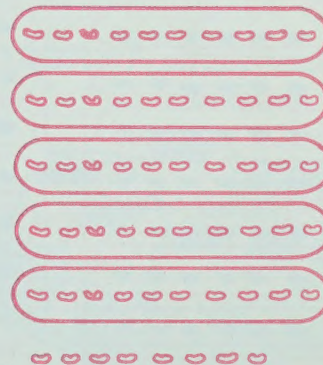
24 BEANS



47 BEANS



58 BEANS



113 BEANS



Draw some beansticks and some beans.

How many beans in all? \_\_\_\_\_



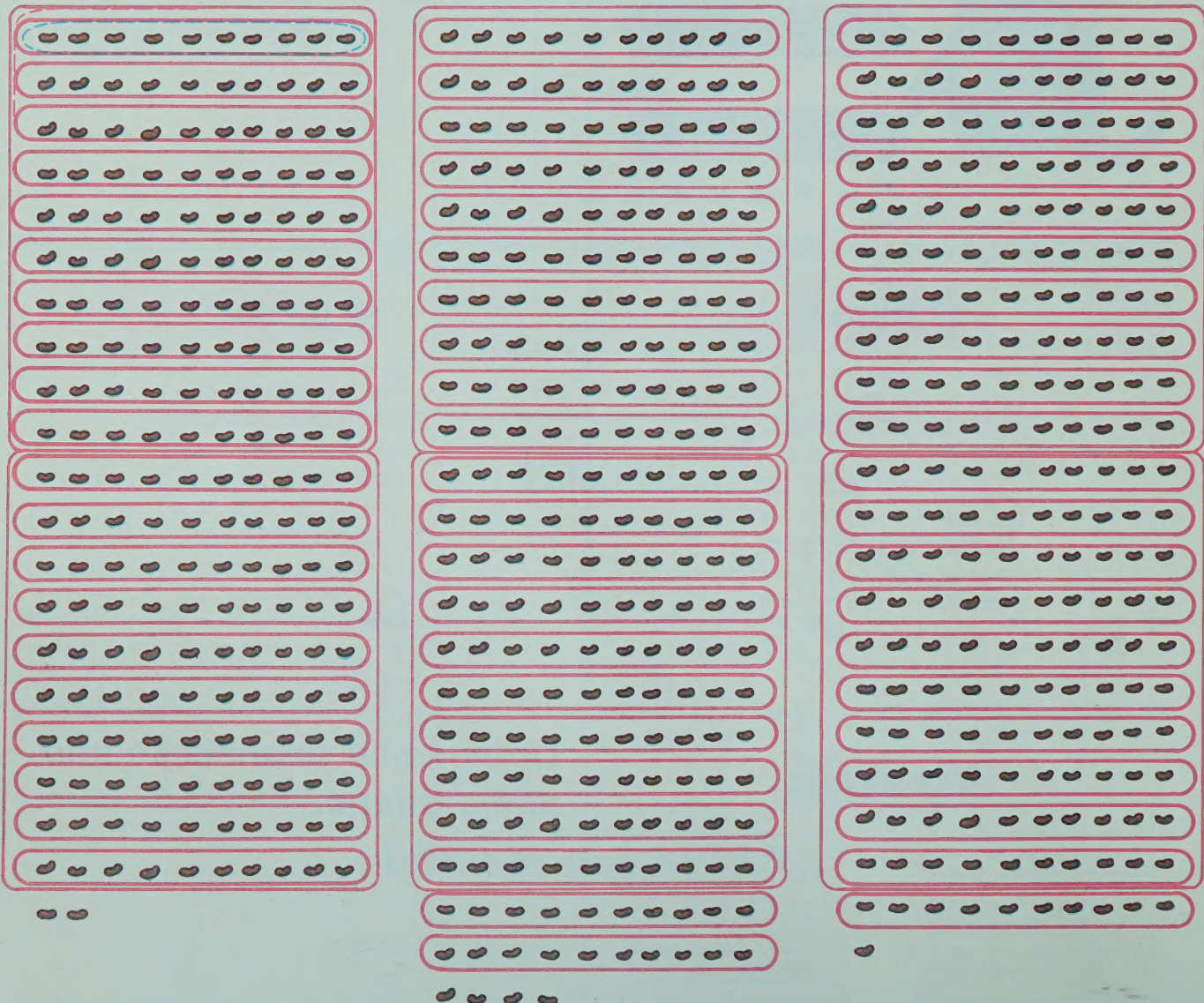


Put a   around enough beans for a **beanstick**.

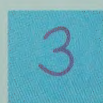
Put a   around enough beansticks for a **box**.

Make as many beansticks as you can.

Make as many boxes as you can.



Boxes



Extra  
beansticks

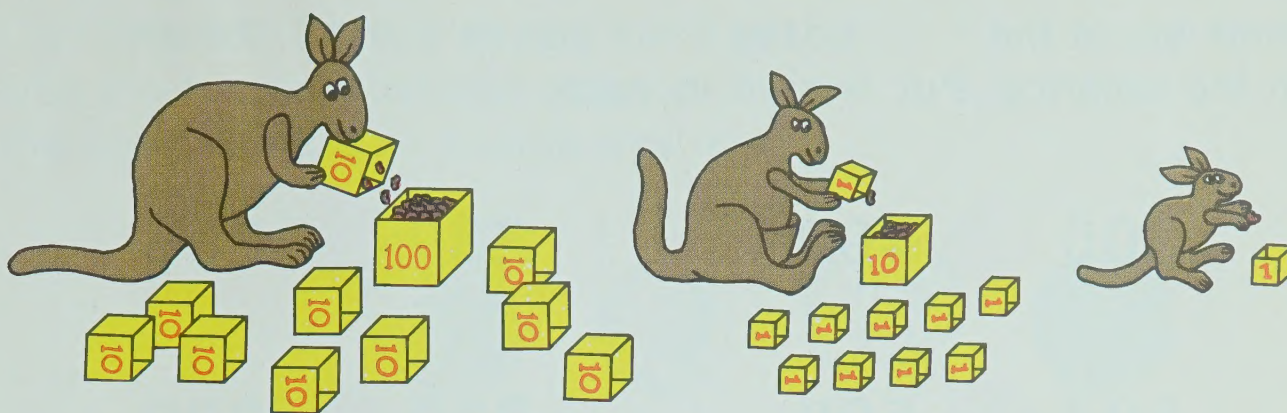


Extra  
beans

beans in all.

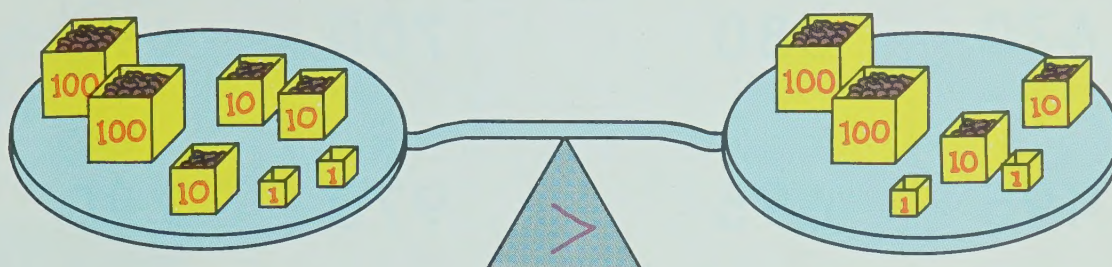


With the aid of the illustrative examples given, the children should be able to compare 3-digit numerals by observing the boxes on each side of the scale. After they have written their 3-digit numerals, alert them to observe the position of the digits in the numeral.



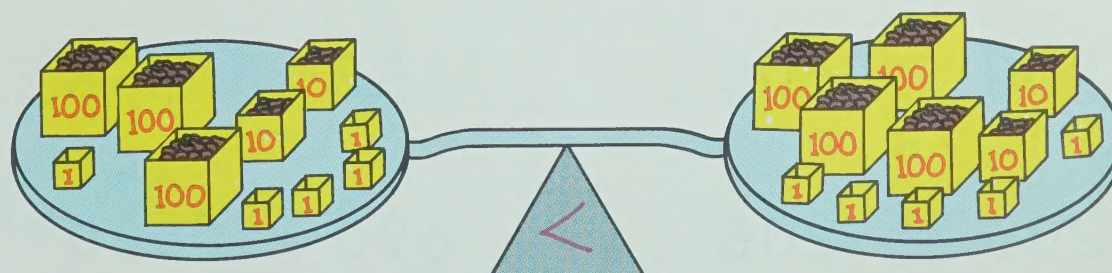
Which side of the balance is heavier?

Put  $<$  or  $>$  in each  $\triangle$  to show your answer.



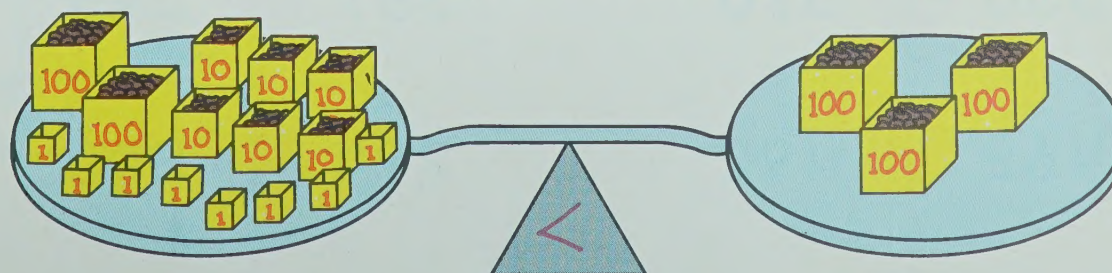
How many?  $\frac{2}{100}$   $\frac{2}{10}$   $\frac{2}{1}$

How many?  $\frac{1}{100}$   $\frac{1}{10}$   $\frac{1}{1}$



How many?  $\frac{3}{100}$   $\frac{2}{10}$   $\frac{5}{1}$


How many?  $\frac{4}{100}$   $\frac{2}{10}$   $\frac{5}{1}$



How many?  $\frac{2}{100}$   $\frac{6}{10}$   $\frac{8}{1}$

How many?  $\frac{3}{100}$   $\frac{0}{10}$   $\frac{0}{1}$



Think about the “100 boxes”, “10 boxes”, and “1 boxes” on the balance. Put  $>$  or  $<$  in each .

$$\begin{array}{ccc} 300 & < & 400 \\ 100 & 10 & 1 \end{array}$$

$$\begin{array}{ccc} 239 & > & 235 \\ 100 & 10 & 1 \end{array}$$

$$\begin{array}{ccc} 507 & > & 504 \\ 100 & 10 & 1 \end{array}$$

$$\begin{array}{ccc} 380 & > & 320 \\ 100 & 10 & 1 \end{array}$$

$$\begin{array}{ccc} 670 & < & 680 \\ 100 & 10 & 1 \end{array}$$

$$\begin{array}{ccc} 700 & > & 690 \\ 100 & 10 & 1 \end{array}$$

$$\begin{array}{ccc} 495 & < & 695 \\ 100 & 10 & 1 \end{array}$$

$$\begin{array}{ccc} 970 & > & 790 \\ 100 & 10 & 1 \end{array}$$

$$900 > 600$$

$$153 < 158$$

$$206 < 208$$

$$690 > 680$$

$$530 < 570$$

$$387 > 298$$

$$462 < 492$$

$$294 < 300$$


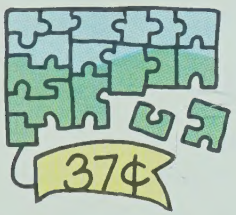


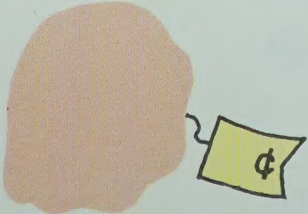
$$376 > 276$$

$$906 > 807$$



Since there are several possible combinations of coins for each value shown, make sure they find the combination using the fewest coins. Encourage them to continue listing the combinations on another piece of paper.

Can you find 3 ways to buy each gift?  
Use the fewest possible coins in one of  
the rows. Mark a ✓ beside this row.

GIFT	QUARTERS	DIMES	NICKELS	PENNIES	
		2	1	4	✓
	1	1		2	✓
	2				
	3	1		4	✓
<p>Your choice</p> 					

12 other answers possible.


23 other answers possible.

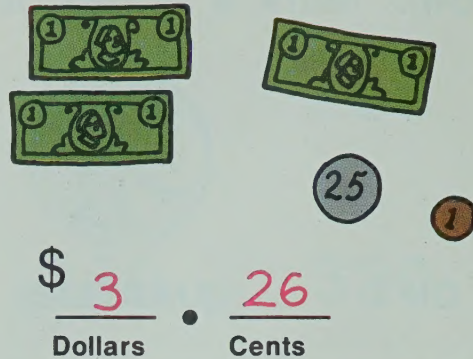
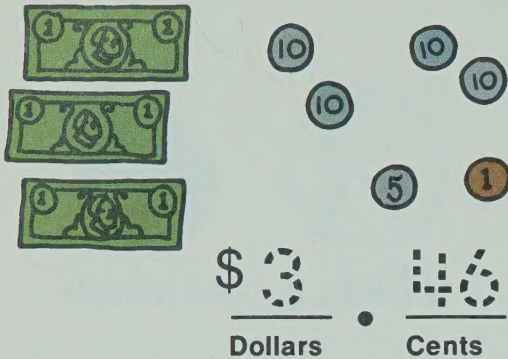
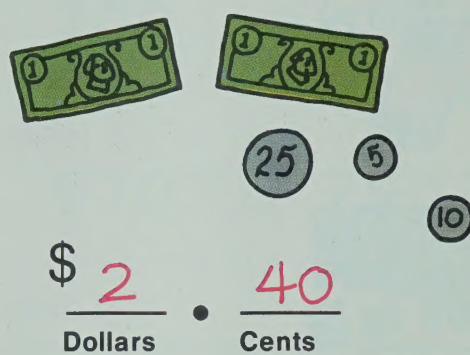
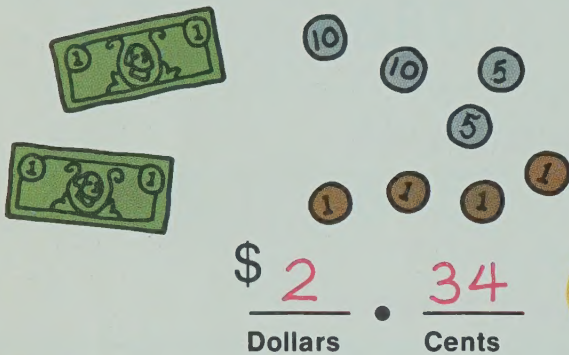
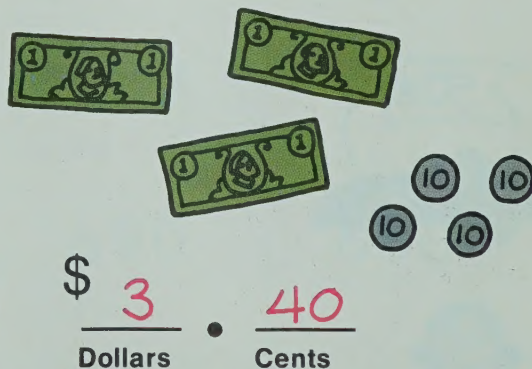
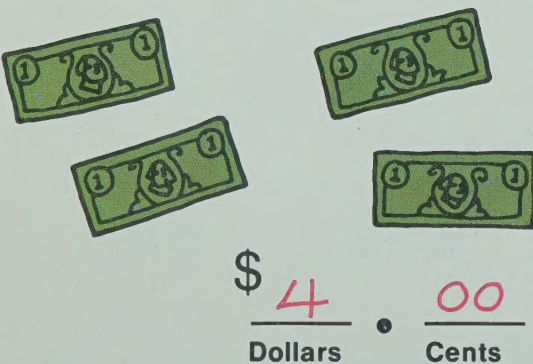
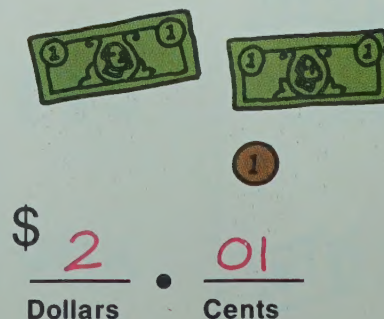
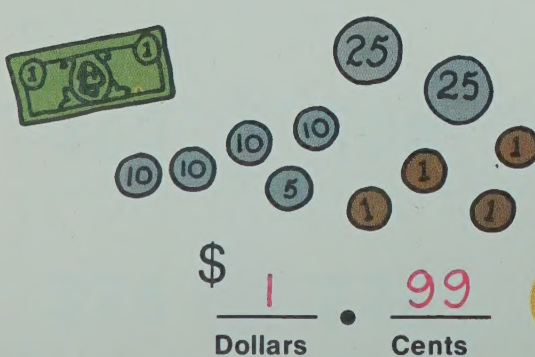
49 other answers possible.

162 other answers possible.



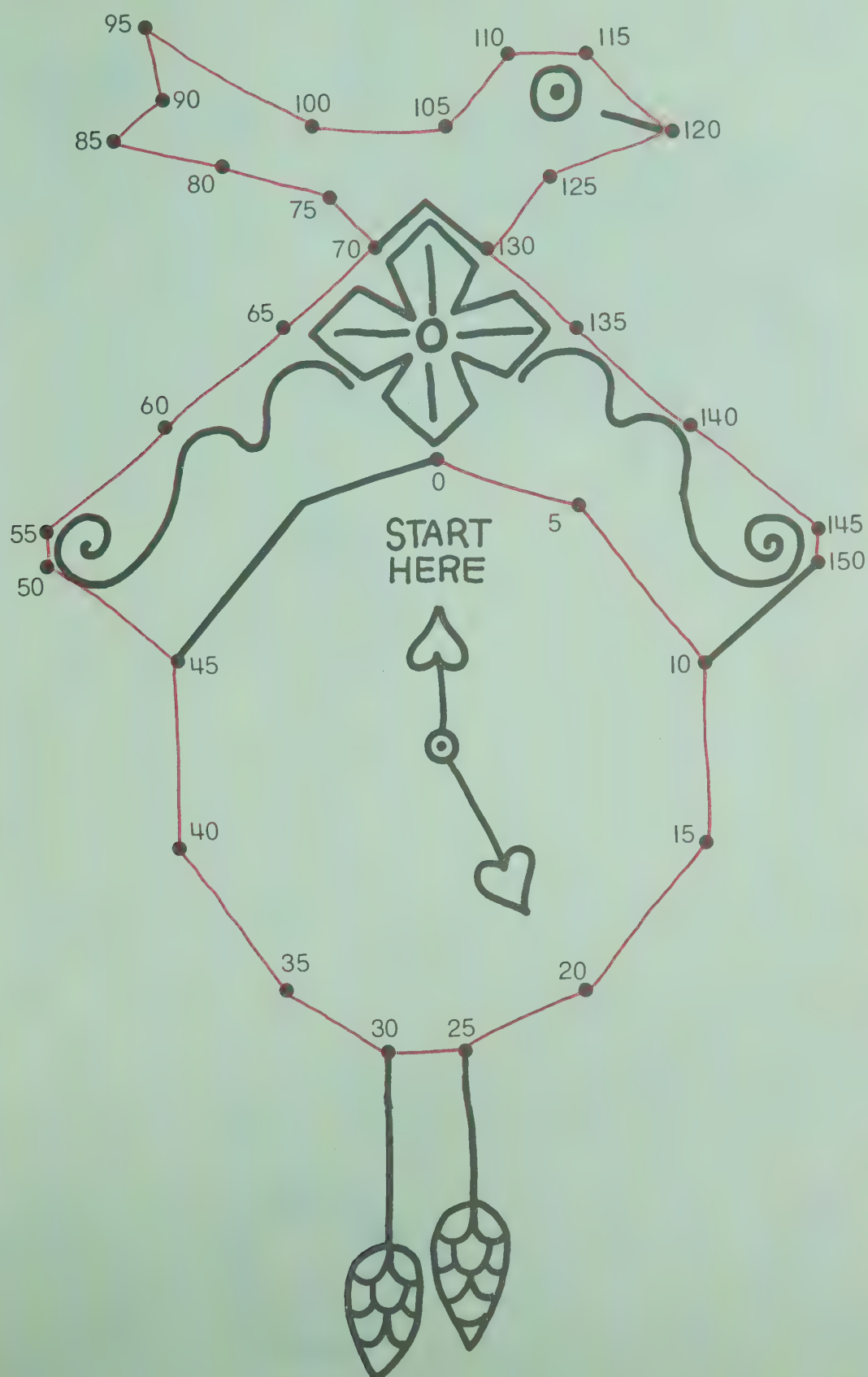
In essence, the children are still comparing 3-digit numbers since \$3.46 is 346 cents and \$3.26 is 326 cents. Point out the dollar-and-cent notation but do not elaborate on the decimal point except to say that it separates the number of dollars from the number of cents.

How much money? Put  $>$  or  $<$  in each  to show which has more.

 $>$  $<$  $>$  $<$



Connect the dots. Count by 5's.

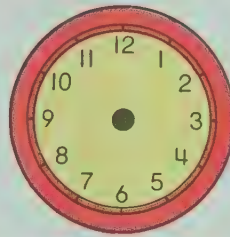




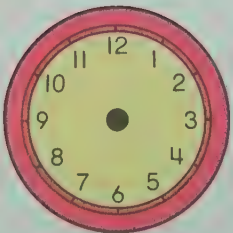
Draw a picture of something you do.  
Show the time you do it on the clock.  
Then write the time.



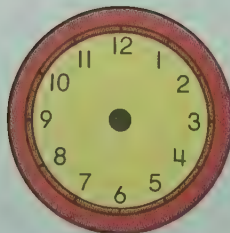
Time \_\_\_\_\_



Time \_\_\_\_\_



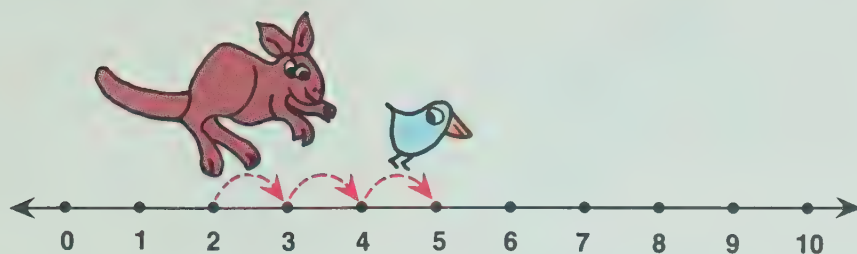
Time \_\_\_\_\_



Time \_\_\_\_\_



Draw some jumps. Complete the equation. **Answers will vary.**



$$2 + 3 = 5$$



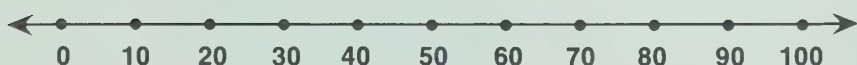
$$10 + \square = \square$$



$$400 + \square = \square$$



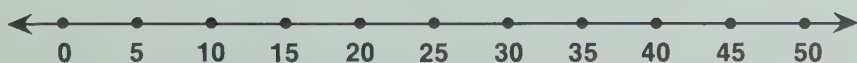
$$0 + \square = \square$$



$$40 + \square = \square$$



$$100 + \square = \square$$

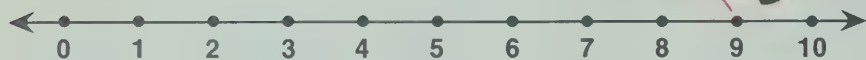


$$5 + \square = \square$$



if the child starts at 20 (2 tens) and draws 4 jumps (4 tens), he should end at 60 (6 tens).

Draw some jumps. Complete the equation. *Answers will vary.*



$$9 - \square = \square$$



$$60 - \square = \square$$



$$800 - \square = \square$$



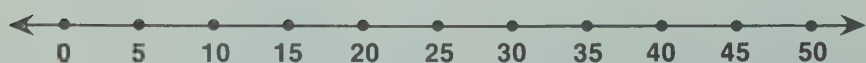
$$10 - \square = \square$$



$$90 - \square = \square$$



$$700 - \square = \square$$

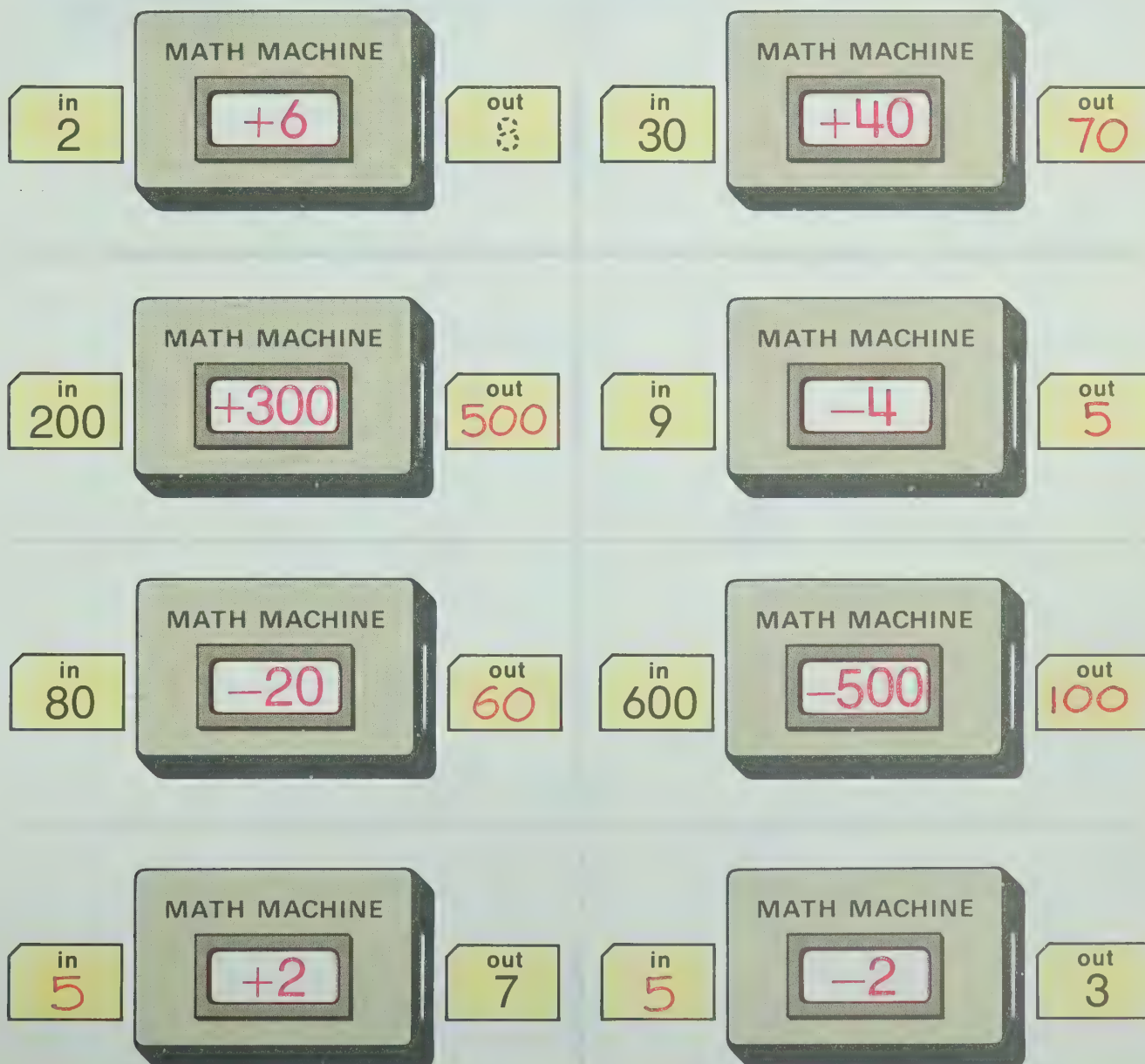
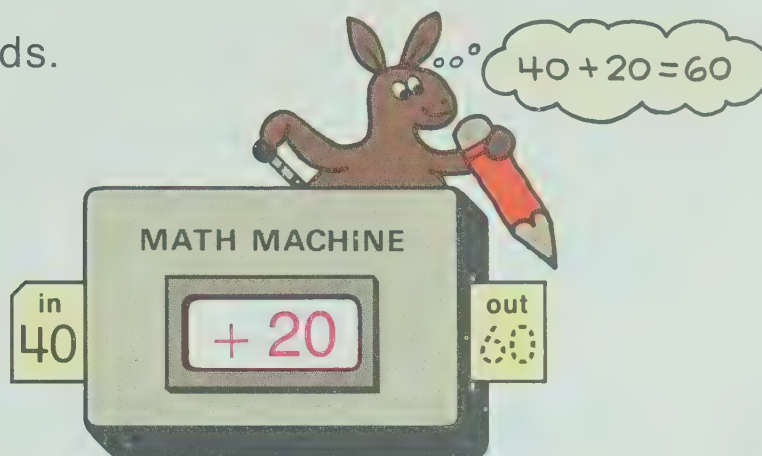


$$50 - \square = \square$$



The "math machine" is a physical device used to informally introduce the concept of function. The *rule*, such as "+ 20", is stated on the front of the machine. The application of the rule on the *in* number will give a unique result, or *out* number.

















Complete the cards.





Since there are 66 possible equations that can be written, have the children continue this lesson on another piece of paper making as many questions as they can.

Make some equations of your own.

30 40 50 60 70 80	+ -	10 20 30 40 50 60
		 = 
_____		_____ = 
_____		_____ = 
_____		_____ = 
_____		_____ = 
_____		_____ = 
_____		_____ = 



Write 50, 60, 70, 80, 90, or 100 in the . Then solve the equation.

Write a subtraction equation that goes with the addition equation.

60

+ 20 =

80



80 - 20 = 60

80 - 60 = 20 is also an expectable answer.

+ 10 =



+ 30 =



+ 40 =



+ 20 =



+ 50 =





Complete the equation for every short story.  
Then solve the problem.

1. Ted had 7 dogs in a pen.

He could see 4.


How many were hiding? 3


 $+ 4 = 7$

5. Mother had 9 cookies.

3 were on a plate.

How many in the jar? 6


 $+ 3 = 9$

2. 10 birds landed in a tree.

Sue could see 6.


How many were in the birdhouse? 4


 $+ 6 = 10$

6. Jan had 6 fish.

She could see 4.

How many were in the castle? 2


 $+ 4 = 6$

3. Eric gave Jon 8 marbles.

Jon could see 5.

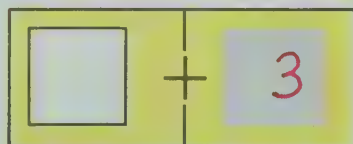
How many were in the bag? 3


 $+ 5 = 8$

7. A dominoe has 7 spots.

One end has 3 spots.

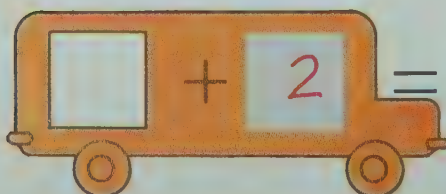
How many spots on the other end? 4


 $+ 3 = 7$

4. 8 people in a car.

2 are in the front seat.


How many in the back? 6


 $+ 2 = 8$

8. 20 students in Jack's class.

5 stayed home.

How many at school? 15


 $+ 5 = 20$



The sums in the gray squares show the sums of the doubles. The children may use a different color for a different sum; for example, all the combinations for 15 could be orange. Or, color the sums  $7 + 8$  and  $8 + 7$  orange and  $6 + 9$  and  $9 + 6$  another color even though the sum is 15 for both pairs of combinations.

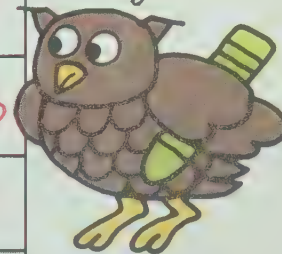
1. Fill in each gray square.
2. Find two "same number" squares.  
Fill them in and color them the same color.  
Do this until the table is complete.  
Use as many different colors as you can.

+	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9	10
2	2	3	4	5	6	7	8	9	10	11
3	3	4	5	6	7	8	9	10	11	12
4	4	5	6	7	8	9	10	11	12	13
5	5	6	7	8	9	10	11	12	13	14
6	6	7	8	9	10	11	12	13	14	15
7	7	8	9	10	11	12	13	14	15	16
8	8	9	10	11	12	13	14	15	16	17
9	9	10	11	12	13	14	15	16	17	18

$2 + 9 = 11$   
and  
 $9 + 2 = 11$



$5 + 7 = 12$   
and  
 $7 + 5 = 12$



Solve the equations.

$$4 + \boxed{5} = 9$$

$$7 + \boxed{6} = 13$$

$$5 + \boxed{4} = 9$$

$$6 + \boxed{7} = 13$$



Find the sums.

20	10	→ 30
30	20	→ 50
50	30	→ 80



50	20	→ 70
40	30	→ 70
90	50	→ 140

Make your own.

60	30	90
20	40	60
80	70	150


Find the missing numbers.

20	30	50
40	10	50
60	40	100

30	40	70
50	10	60
80	50	130



Find the sums. Look for 10's.

10 + 4 = 14

3 + 7 = 10

$$\begin{array}{r} 3 \\ 4 \\ 7 \\ + \\ \hline 14 \end{array}$$

$$\begin{array}{r} 4 \\ 6 \\ + 7 \\ \hline 17 \end{array}$$

4 and 6 combine to form 10.

$$\begin{array}{r} 2 \\ 5 \\ + 8 \\ \hline 15 \end{array}$$

2 and 8 combine to form 10.

$$\begin{array}{r} 4 \\ 6 \\ 7 \\ + 3 \\ \hline 20 \end{array}$$

4 and 6 combine to form 10. 7 and 3 combine to form 10.

$$\begin{array}{r} 5 \\ 3 \\ 5 \\ + 7 \\ \hline 20 \end{array}$$

5 and 5 combine to form 10. 3 and 7 combine to form 10.

$$\begin{array}{r} 8 \\ 2 \\ 4 \\ + 6 \\ \hline 20 \end{array}$$

8 and 2 combine to form 10. 4 and 6 combine to form 10.

$$\begin{array}{r} 9 \\ 6 \\ 1 \\ + 2 \\ \hline 18 \end{array}$$

9 and 1 combine to form 10. 6 and 2 combine to form 8.

$$\begin{array}{r} 6 \\ 7 \\ 4 \\ 3 \\ + 5 \\ \hline 25 \end{array}$$

6 and 4 combine to form 10. 7 and 3 combine to form 10. 5 remains.

$$\begin{array}{r} 8 \\ 7 \\ 3 \\ 2 \\ + 1 \\ \hline 21 \end{array}$$

8 and 2 combine to form 10. 7 and 3 combine to form 10. 1 remains.

$$\begin{array}{r} 6 \\ 5 \\ 3 \\ 4 \\ + 5 \\ \hline 23 \end{array}$$

6 and 4 combine to form 10. 5 and 3 combine to form 8. 5 remains.

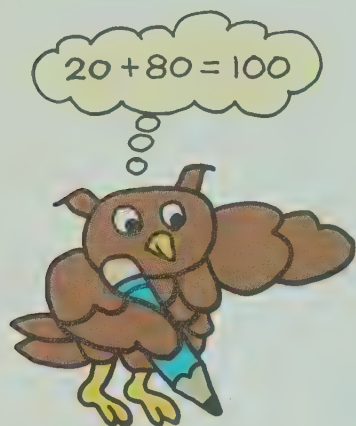
$$\begin{array}{r} 9 \\ 1 \\ 7 \\ 3 \\ + 6 \\ \hline 26 \end{array}$$

9 and 1 combine to form 10. 7 and 3 combine to form 10. 6 remains.



find the final sum than it is to add the numbers in succession as they are listed in each problem.

Find the sums. Look for 100's.



$$\begin{array}{r} 20 \\ 80 \\ + 70 \\ \hline 170 \end{array}$$

$$\begin{array}{r} 50 \\ 30 \\ + 70 \\ \hline 150 \end{array}$$

$$\begin{array}{r} 90 \\ 40 \\ + 10 \\ \hline 140 \end{array}$$

$$\begin{array}{r} 30 \\ 70 \\ 20 \\ + 80 \\ \hline 200 \end{array}$$

$$\begin{array}{r} 90 \\ 20 \\ 10 \\ + 80 \\ \hline 200 \end{array}$$

$$\begin{array}{r} 60 \\ 70 \\ 40 \\ + 10 \\ \hline 180 \end{array}$$

$$\begin{array}{r} 50 \\ 10 \\ 50 \\ + 90 \\ \hline 200 \end{array}$$

$$\begin{array}{r} 60 \\ 70 \\ 40 \\ 30 \\ + 80 \\ \hline 280 \end{array}$$

$$\begin{array}{r} 50 \\ 10 \\ 70 \\ 90 \\ + 50 \\ \hline 270 \end{array}$$

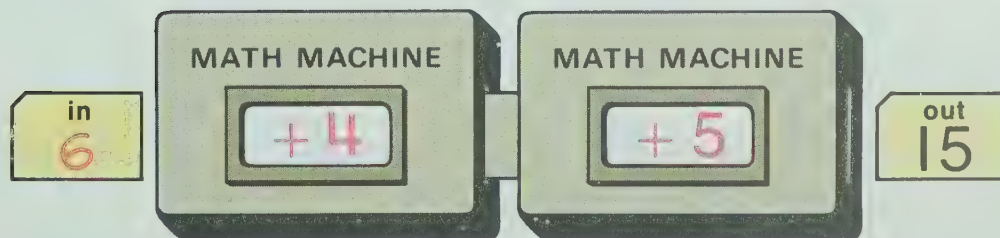
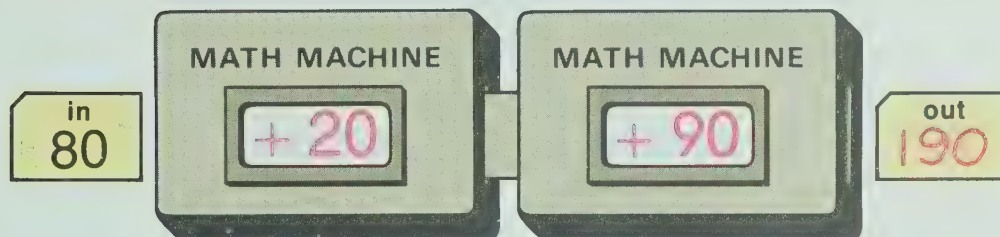
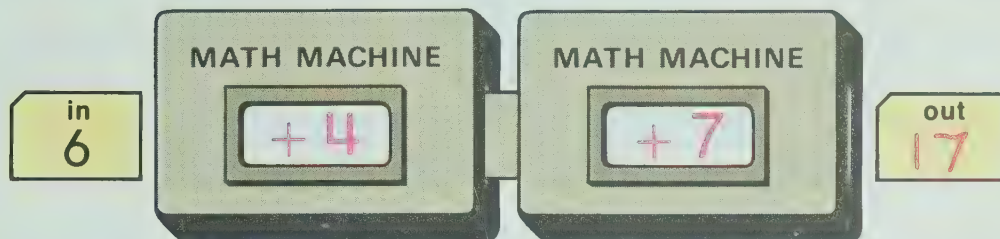
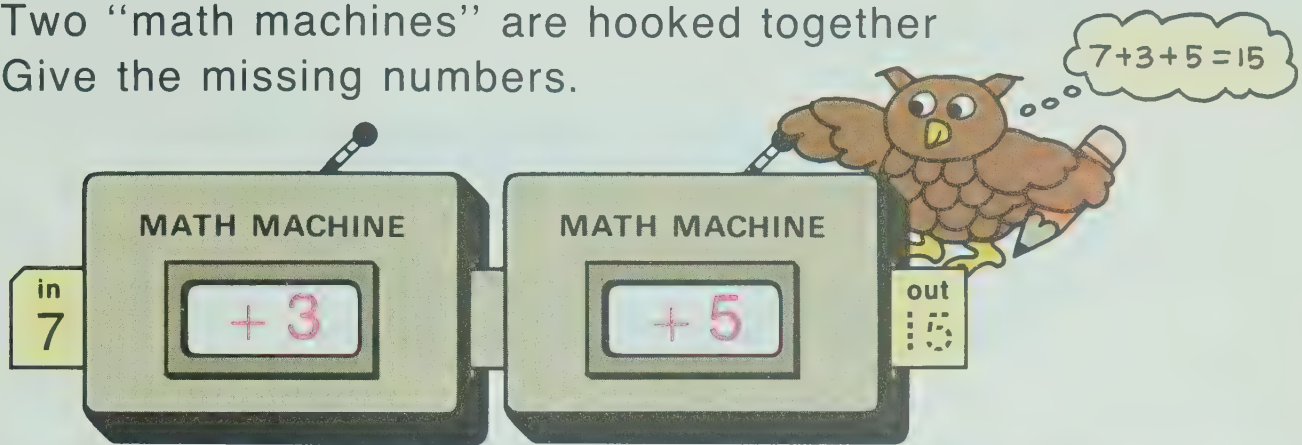
$$\begin{array}{r} 50 \\ 30 \\ 50 \\ 40 \\ + 70 \\ \hline 240 \end{array}$$

$$\begin{array}{r} 80 \\ 70 \\ 20 \\ 10 \\ + 20 \\ \hline 200 \end{array}$$

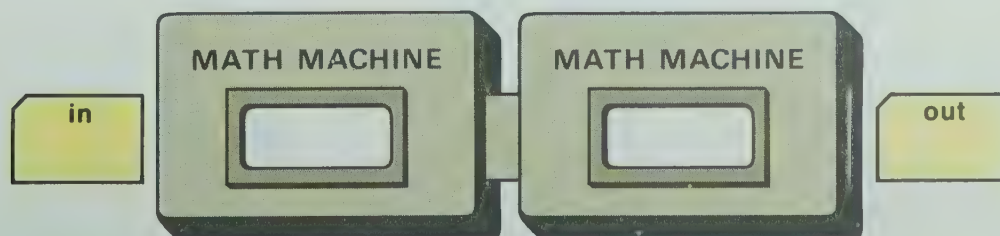
You may wish to have the children do some “chain” problems such as  $7+3+5$  or  $7+3+2+7$  before they attempt the problems which follow. They may notice that the first two numbers give a sum of a multiple 10 or 100. When the

*continued on next page*

Two “math machines” are hooked together  
Give the missing numbers.



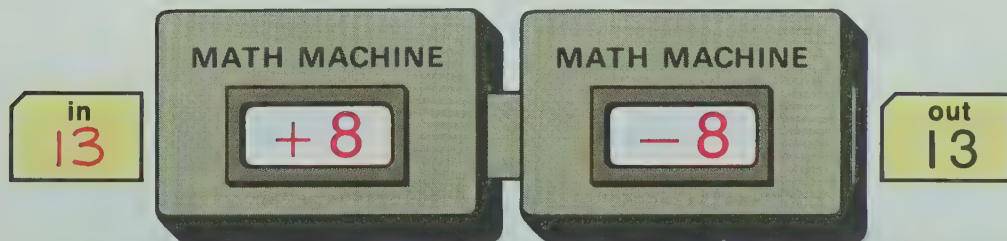
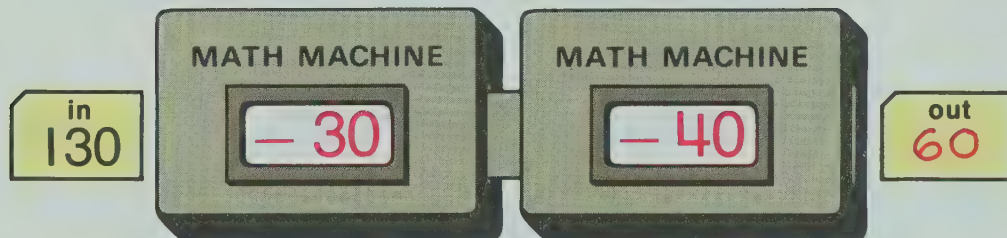
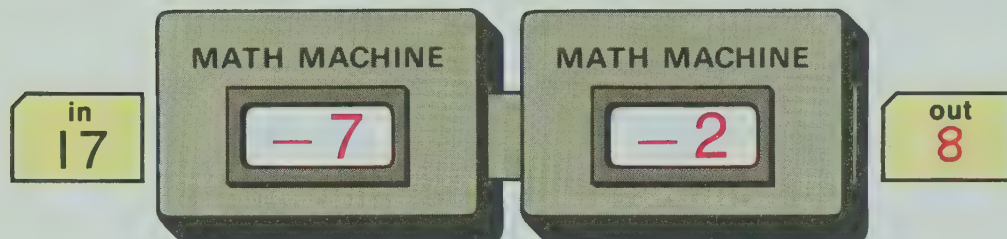
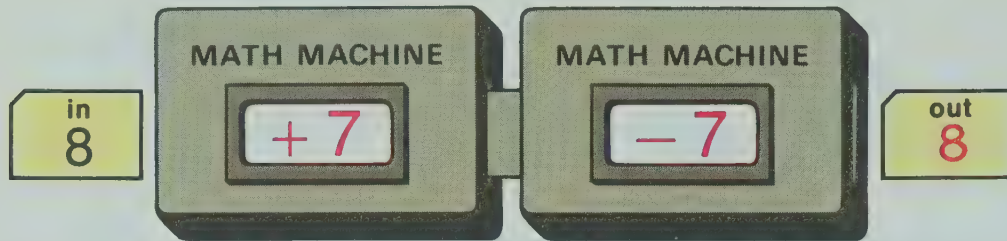
Choose your own numbers.



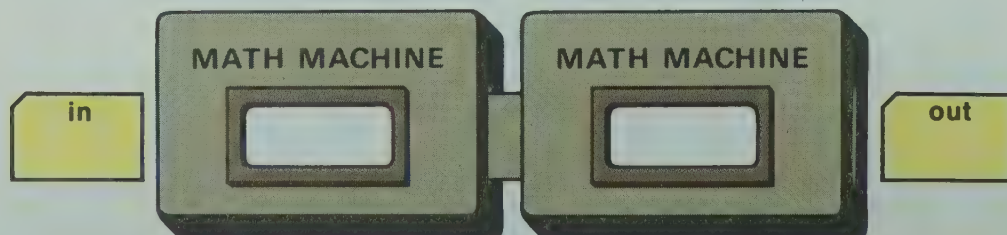


children make up their own problems at the bottom of these two pages, have them fill in all but one card or window. Then cut off these problems and exchange them with a classmate.

Give the missing numbers.



Choose your own numbers.



The children may prefer to draw a picture for each equation first and then write a short story describing the situation. If they have difficulty with spelling or sentence structure, simply have them write picture problems (see f-22). Be sure they use the numbers properly in their stories.

Each equation can be used to solve a “short story” problem.  
Write your own “short story” and solve the equation.  
You can draw a picture if you wish.

Short story:

Tom had 7 cents.

He found 4 cents.

How much in all?



$$7 + 4 = 11$$

Short story:

---

---

---

---

---

$$16 - 7 = 9$$

Short story:

---

---

---

---

---

$$8 + 9 = 17$$

Short story:

---

---

---

---

---

$$13 - 9 = 4$$



For the last problem, urge the children to make more than one "mystery problem" in the space provided. They could even draw a treasure map of related mystery problems.

Can you find the mystery number  ?



If you add me  
to 8, you get 12.  
Who am I?



If you subtract  
me from 15,  
you get 9.  
Who am I?



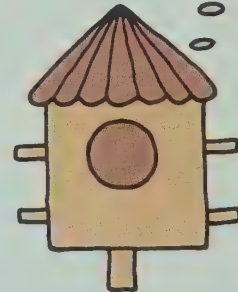
If you add me  
to myself, you get 20.  
Who am I?



If you double  
me and add 1,  
you get 17.  
Who am I?




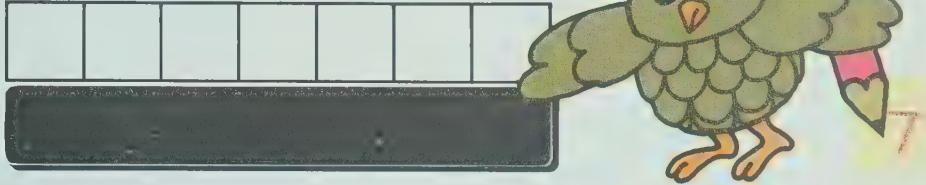






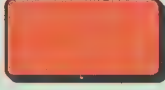
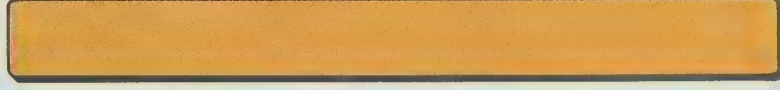
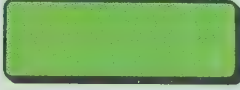
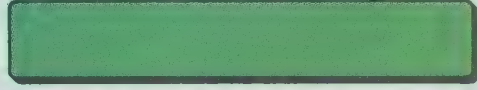
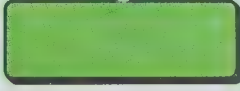
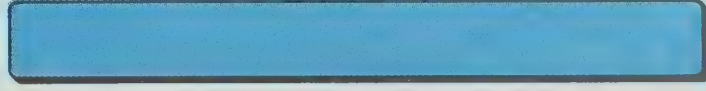
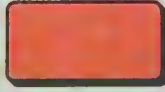
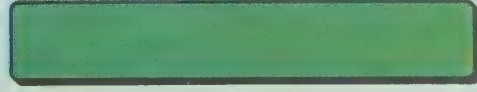
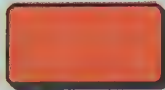
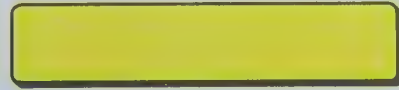
If you subtract  
me from 17,  
you get 9.  
Who am I?



Make a "mystery problem" of your own.

In this lesson, attention is focused on the basic ideas involved in the measurement process: (1) selection of a unit of measure and (2) counting the number of times that the unit of measure is contained in the object measured. Compare the sixth and eighth frames carefully.

Complete the table.

If this is the UNIT,	the length of the strip is
	
	 10
	 2
	 4
	 5
	 2
	 3
	 3
	 $2\frac{1}{2}$



Besides providing more practice measuring objects to the nearest inch or centimeter, this lesson gives the child the chance to compare inches with centimeters. He may soon discover that when two different units of measure are used to measure the same object, *the smaller the unit, the larger the number for the measure of each object.*

About how long? *Answers depend on child's measurements.*

Your shoe



About \_\_\_\_ inches.

About \_\_\_\_ centimeters.

Your hand



About \_\_\_\_ inches.

About \_\_\_\_ centimeters.

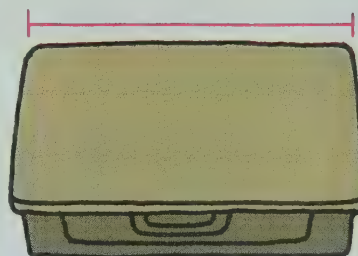
Foot ruler



About 12 inches.

About 30 centimeters.

Desk or Table



About \_\_\_\_ inches.

About \_\_\_\_ centimeters.

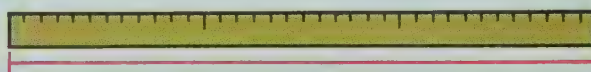
Your height



About \_\_\_\_ inches.

About \_\_\_\_ centimeters.

Yard stick



About 36 inches.

About 90 centimeters.

Find some things to measure and draw them.  
Then tell about how long they are.

About \_\_\_\_ inches.

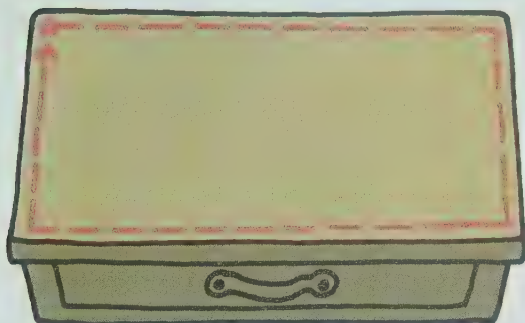
About \_\_\_\_ centimeters.

About \_\_\_\_ inches.

About \_\_\_\_ centimeters.

About how far is it around each object? *Answers depend on child's measurements.*

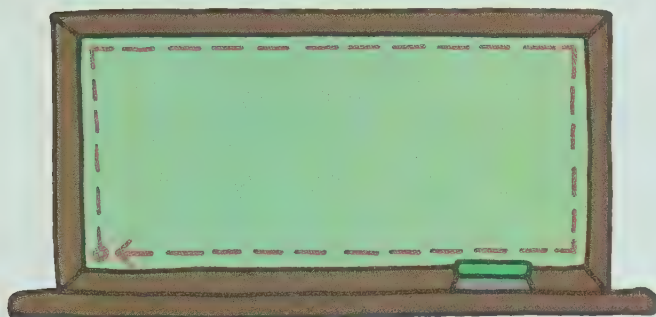
YOUR DESK



\_\_\_\_\_ inches

\_\_\_\_\_ centimeters

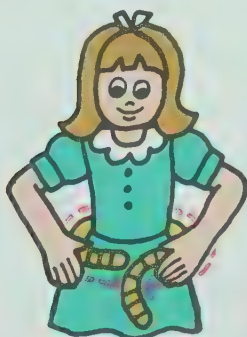
THE CHALKBOARD



\_\_\_\_\_ feet

\_\_\_\_\_ yards

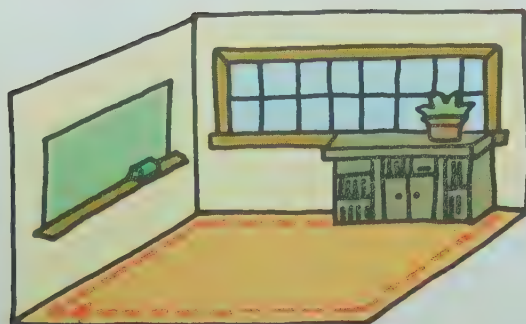
YOUR WAIST



\_\_\_\_\_ inches

\_\_\_\_\_ centimeters

YOUR ROOM





\_\_\_\_\_ feet

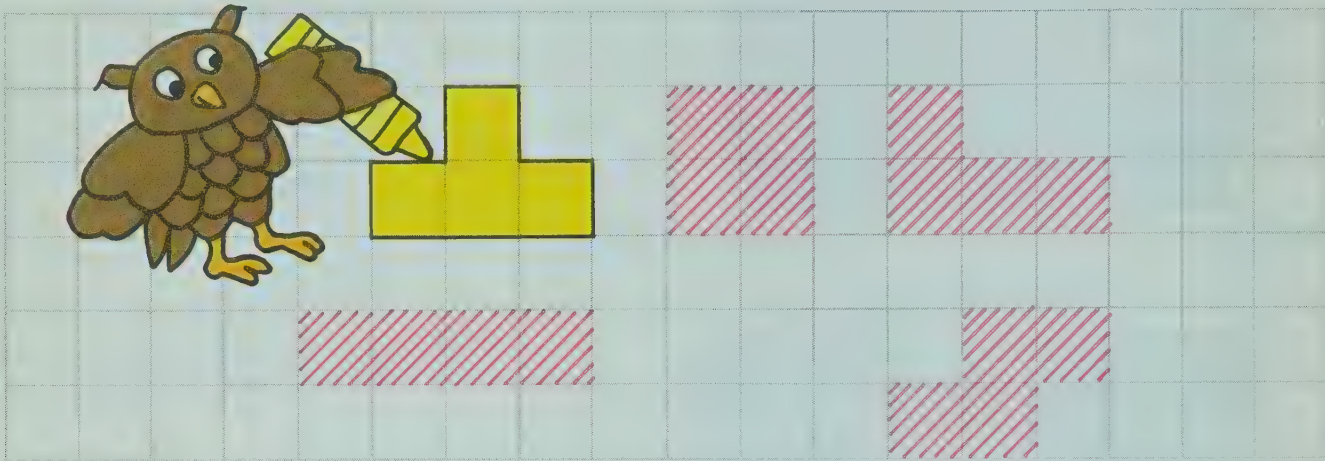
\_\_\_\_\_ yards

\_\_\_\_\_ meters

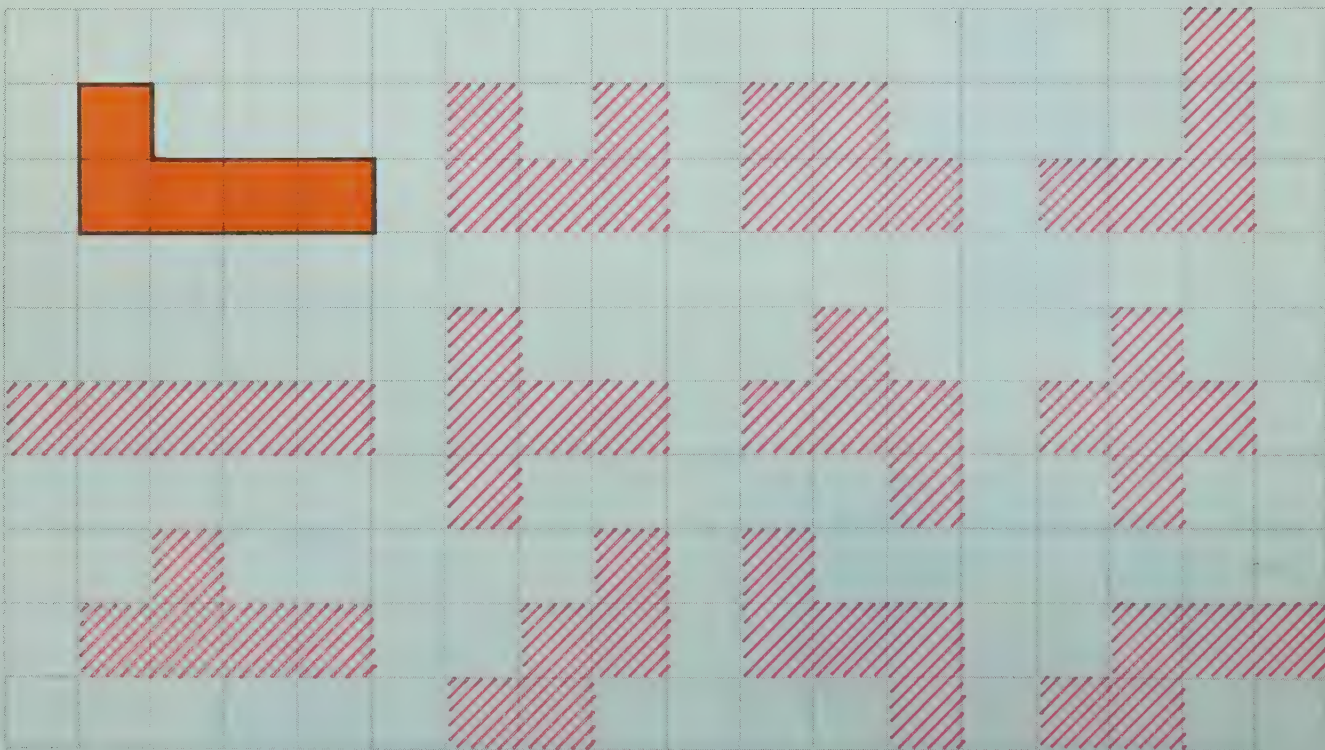


The instructions to make the “islands” so that *each square touches another along a side* means that figures such as  or  are not permissible. Also, a figure which appears to have a different shape due to a rotation or a flip is considered the same piece or “island.”

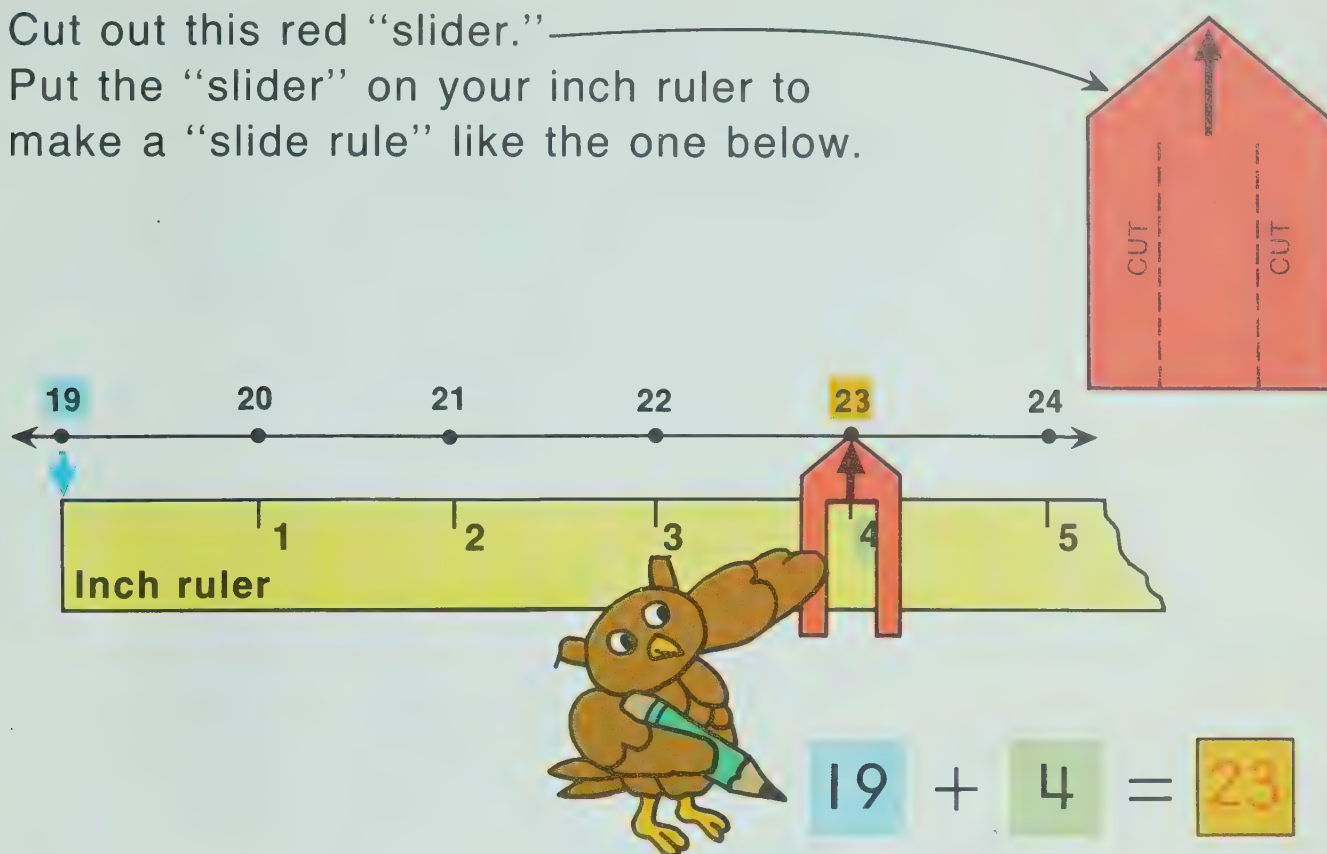
Look at the “4 square island” below. Notice that each square touches another square along a side. Draw and color as many differently shaped “4 square islands” as you can.



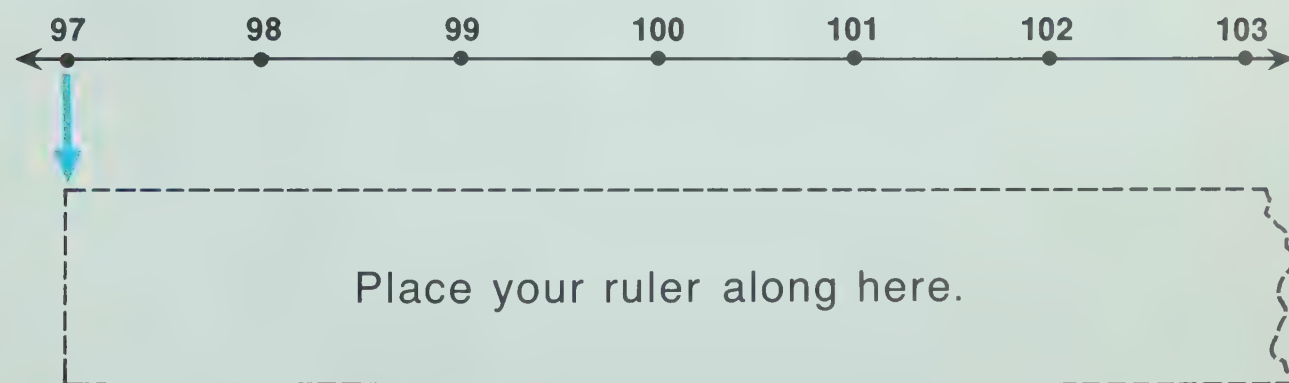
Here is a “5 square island.” How many differently shaped “5 square islands” can you draw and color?



Cut out this red "slider."  
Put the "slider" on your inch ruler to make a "slide rule" like the one below.



Use your "slide rule" and the number line below to solve the equations.



$$97 + 2 = 99$$

$$97 + 6 = 103$$

$$97 + 3 = 100$$

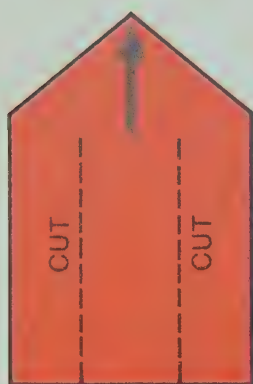
$$97 + 1 = 98$$

$$97 + 4 = 101$$

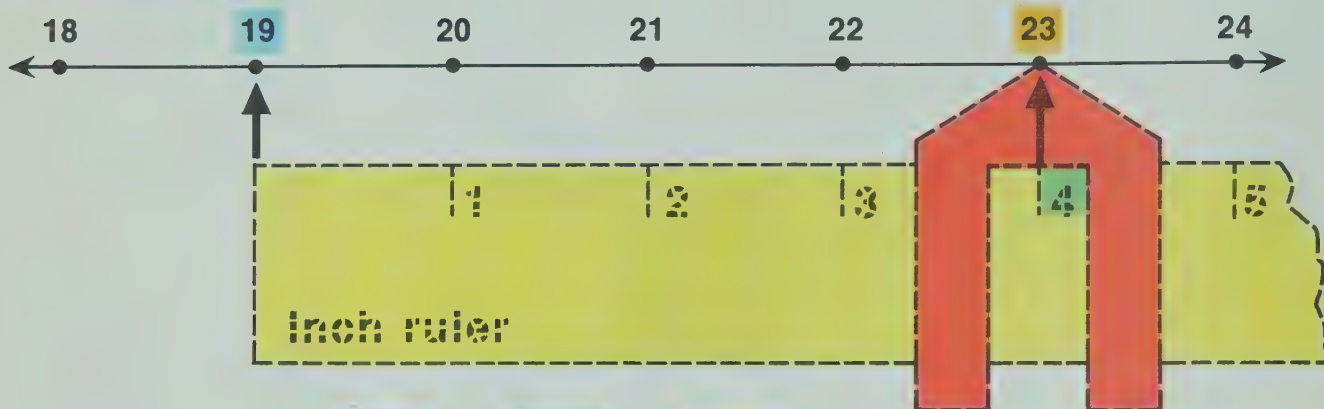
$$97 + 5 = 102$$



first addend 19 and then position the slider over the 4 (other addend). Finally, look to see which numeral on the number line that the slider points to. It should be 23. Plan to go through a few more examples such as  $19 + 2$ . For subtraction (page 14), however, they must first find the number 23 with their slider positioned over the 4 and then look to see where the left end of the ruler aligns with.

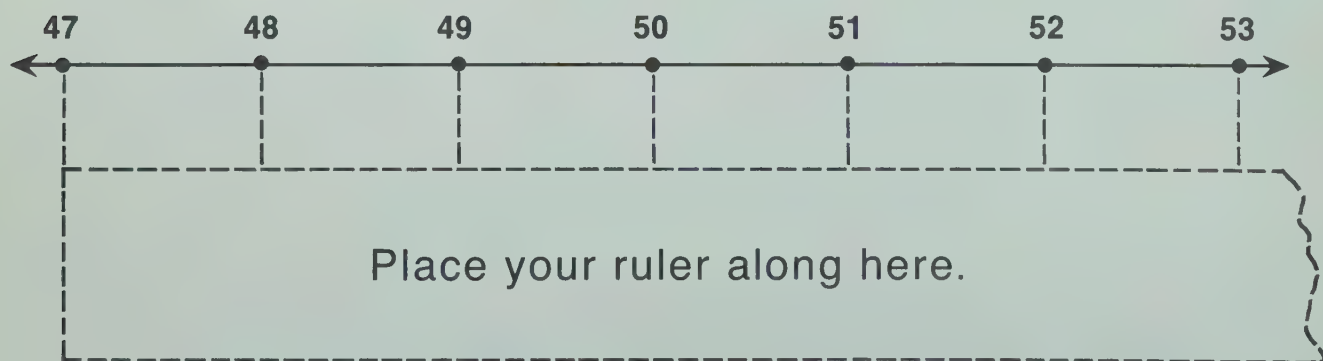


Use your "slide rule" and the number lines below to solve the equations. The first picture shows you how to subtract by reading your "slide rule" backwards.



$$23 - 4 = 19$$

$$23 - 5 = 18 \quad 22 - 3 = 19 \quad 24 - 5 = 19$$



$$\begin{array}{lll} 47 + 4 = 51 & 52 - 3 = 49 & 48 + 3 = 51 \\ 47 + 6 = 53 & 53 - 5 = 48 & 51 - 4 = 47 \end{array}$$

Since these reconstruction problems do not involve regrouping, the child might "break apart" the problem  $35 + \square\square = 67$  into two problems and ask himself "5 plus what number is 7?" and "3 plus what number is 6?" rather than "35 plus what number is 67?"



Write the numeral for each   .

$$\begin{array}{r} 35 \\ + 32 \\ \hline 67 \end{array}$$

$$\begin{array}{r} 54 \\ + 24 \\ \hline 78 \end{array}$$

$$\begin{array}{r} 42 \\ + 37 \\ \hline 79 \end{array}$$

$$\begin{array}{r} 64 \\ + 22 \\ \hline 86 \end{array}$$

$$\begin{array}{r} 45 \\ + 33 \\ \hline 78 \end{array}$$

$$\begin{array}{r} 14 \\ + 55 \\ \hline 69 \end{array}$$

$$\begin{array}{r} 42 \\ + 37 \\ \hline 79 \end{array}$$

$$\begin{array}{r} 54 \\ + 45 \\ \hline 99 \end{array}$$

$$\begin{array}{r} 79 \\ - 34 \\ \hline 45 \end{array}$$

$$\begin{array}{r} 97 \\ - 62 \\ \hline 35 \end{array}$$

$$\begin{array}{r} 97 \\ - 42 \\ \hline 55 \end{array}$$

$$\begin{array}{r} 96 \\ - 24 \\ \hline 72 \end{array}$$

$$\begin{array}{r} 99 \\ - 23 \\ \hline 76 \end{array}$$

$$\begin{array}{r} 84 \\ - 21 \\ \hline 63 \end{array}$$

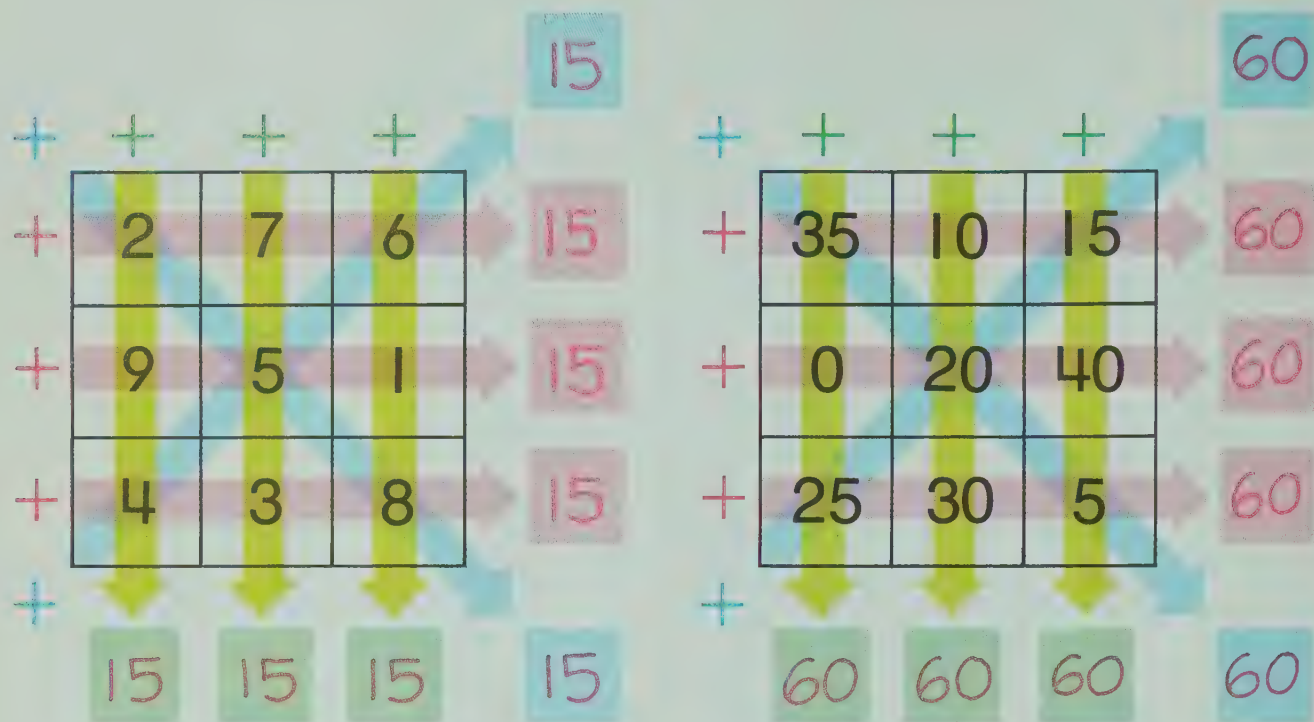
$$\begin{array}{r} 79 \\ - 23 \\ \hline 56 \end{array}$$

$$\begin{array}{r} 79 \\ - 16 \\ \hline 63 \end{array}$$

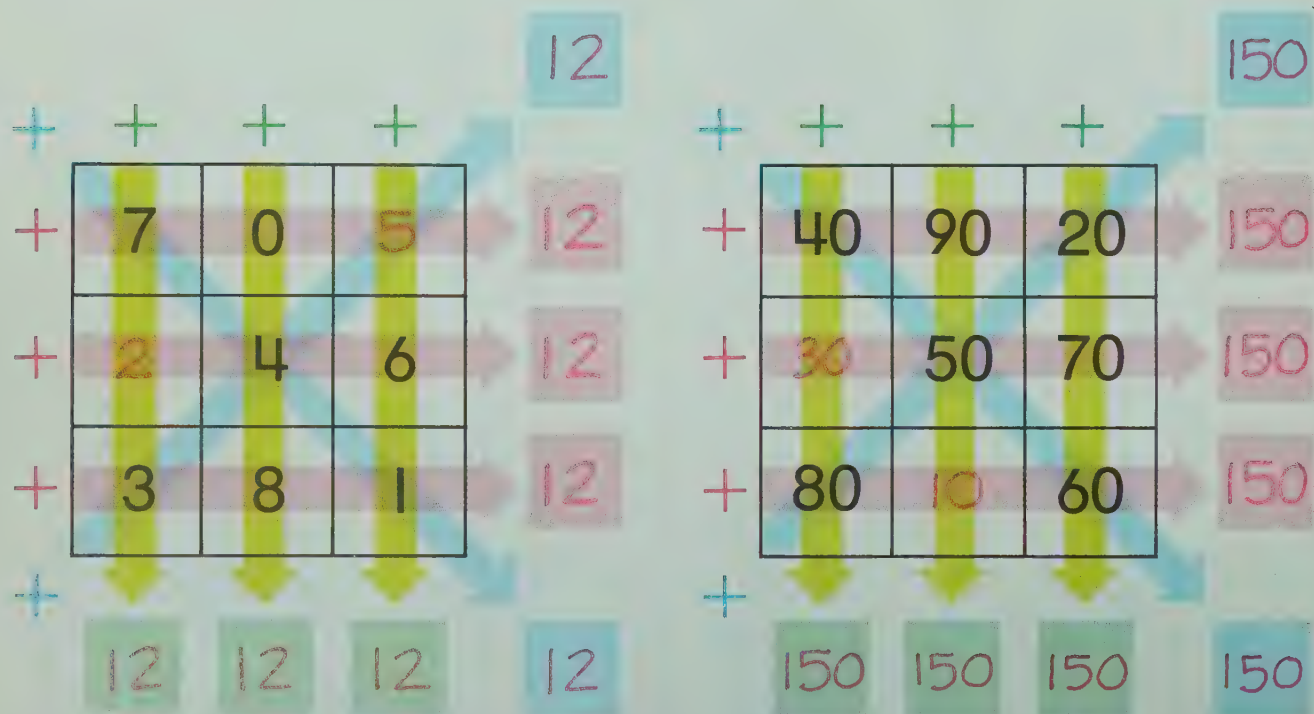


The children will soon notice that the sum of each row, column, and diagonal is the same. After they finish this page, provide them with more problems as shown in the "Follow-up" teaching commentary on page 251 or have them make up magic squares of their own and exchange them with a friend.

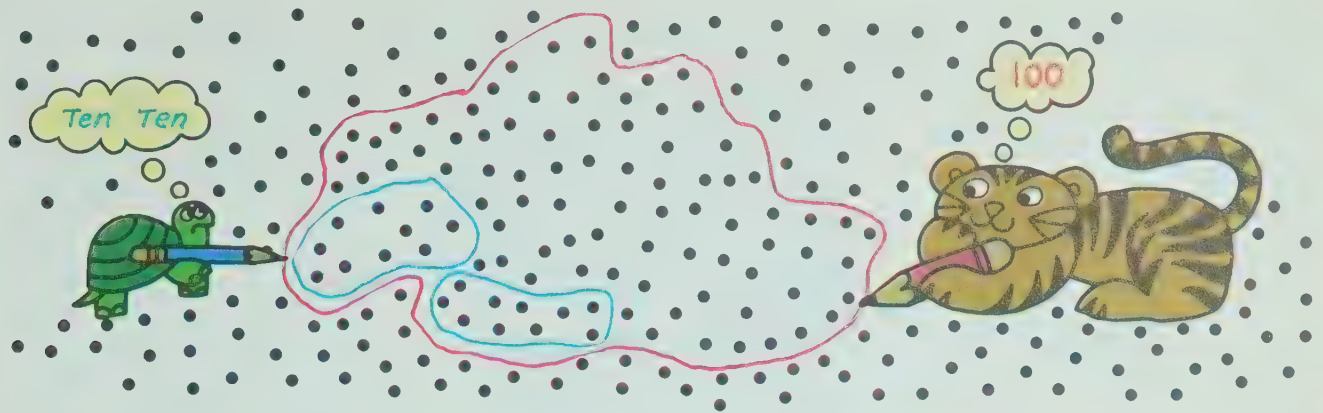
## Find the sums for the MAGIC SQUARES



Find the missing numbers. Make the squares "magic."



After ringing their guess of 100 dots, bright children may proceed to ring sets of 10 dots as an aid in counting the dots in order to answer the first question. This will also help them to answer the other questions more quickly.



**Without counting**, draw a ring around what you would guess to be **100** dots.



How many dots did you ring? \_\_\_\_\_

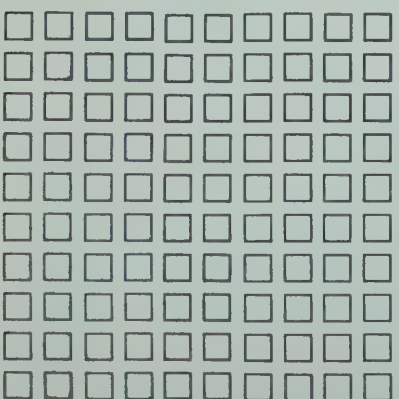
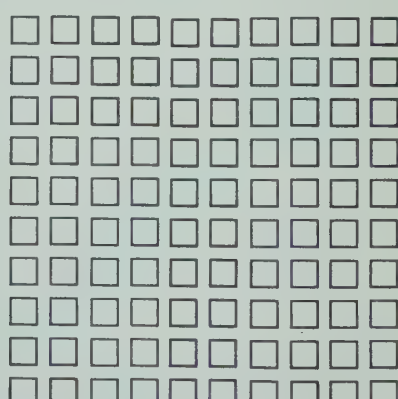
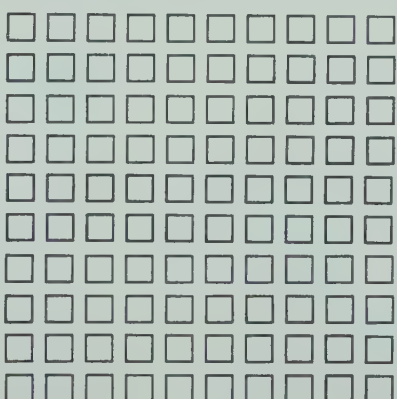
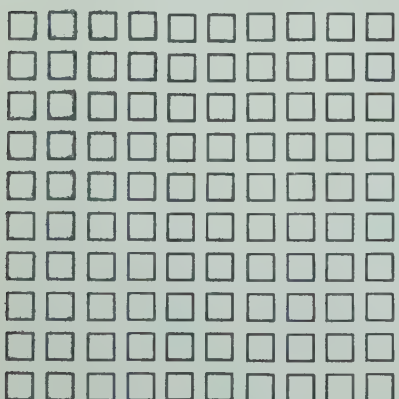
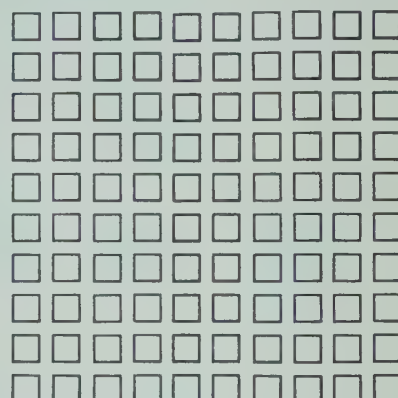
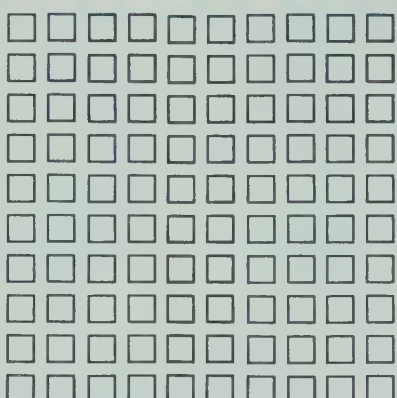
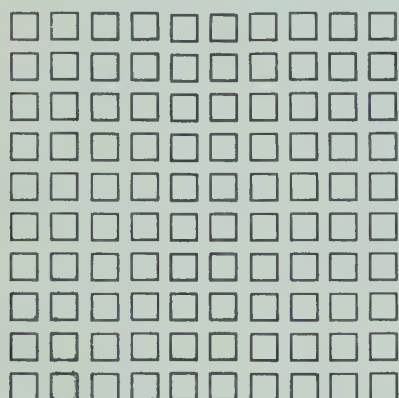
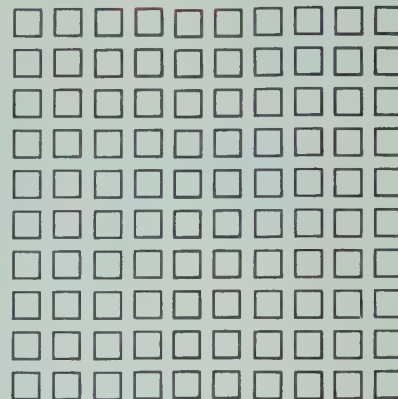
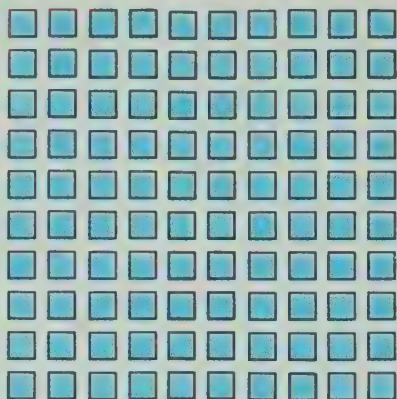
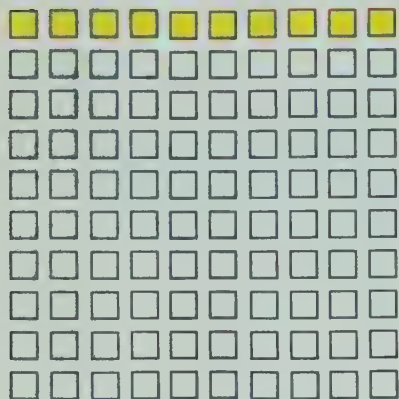
How many more or less  
than **100** dots did you ring? \_\_\_\_\_

How many sets of **10** dots did you ring? \_\_\_\_\_




Children could work through this page the same way they did for text page g-3. Stress that 8 hundreds is 800, 9 hundreds is 900, and finally lead up to 10 hundreds to be 1000. When the child is marking each figure, urge him to count the squares orally one by one. This will give him practice in counting, especially with 3-digit numbers.

Here are **one thousand** squares □. We write **1000**.




How many in each  ? 10

How many in each  ? 100

How many **10** 's in 1000? 100

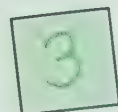
How many **100** 's in 1000? 10

How long do you think it would take you to mark  **each** square? \_\_\_\_\_

How many different 3-digit numerals can you make using these digits?

Cut out slips of paper and try it.

List the numerals you find.



936  
693

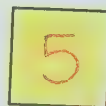
963  
396

639  
369

Which is the largest? 963

Which is the smallest? 369

Write all the different 4-digit numerals you can make using these digits.



1579

1597

1759

1795

1957

1975

5179

5197

5719

5791

5917

5971

7159

7195

7519

7591

7915

7951

9157

9175

9517

9571

9715

9751

Which is the largest? 9751

Which is the smallest? 1579

Which is the closest to this year's date ? 1975



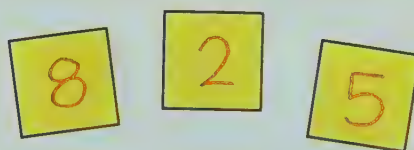
The children may use another piece of paper to record all of the numerals possible and then put them in order when they list them below. However, encourage them to discover an organized way so that they can simultaneously make up the numerals and list them in order.

Think of all the 3-digit numerals as you can using these digits. List them in order from the smallest to the largest.



<u>247</u>	<u><del>274</del></u>	<u>427</u>	<u>472</u>	<u>724</u>	<u>742</u>
smallest					largest

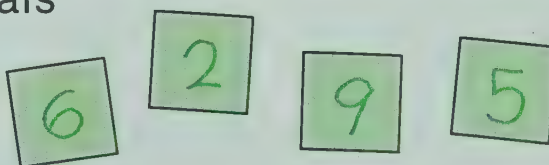
Think of all the 1, 2, and 3-digit numerals using these three digits. List them in order from the smallest to the largest.



<u>2</u>	<u>5</u>	<u>8</u>	<u>25</u>	<u>28</u>
smallest				
<u>52</u>	<u>58</u>	<u>82</u>	<u><del>85</del></u>	<u>258</u>
<u>285</u>	<u><del>528</del></u>	<u>582</u>	<u>825</u>	<u>852</u>
				largest

Think of all the 4-digit numerals using these digits.

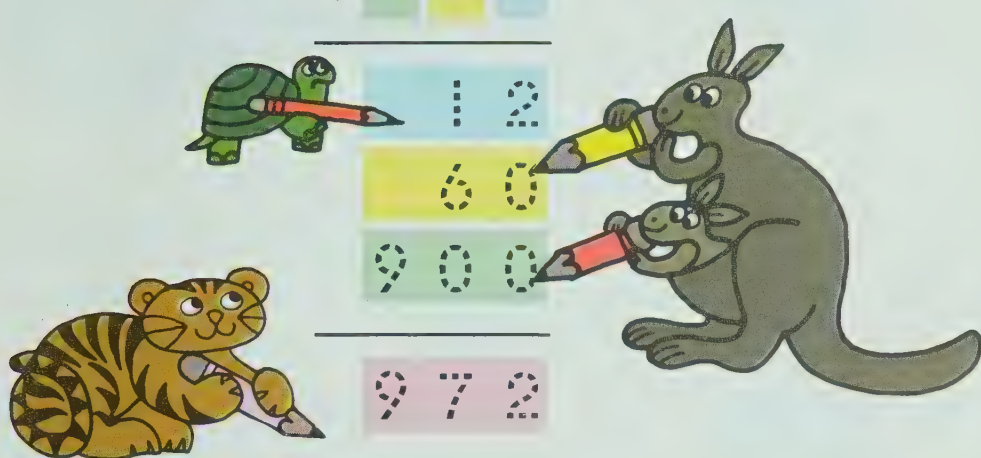
List them in order from the smallest to the largest.



<u>2569</u>	<u>2596</u>	<u><del>2659</del></u>	<u>2695</u>	<u>2956</u>	<u>2965</u>
smallest					
<u>5269</u>	<u>5296</u>	<u>5629</u>	<u>5692</u>	<u>5926</u>	<u>5962</u>
<u>6259</u>	<u>6295</u>	<u>6529</u>	<u>6592</u>	<u>6925</u>	<u>6952</u>
<u>9256</u>	<u>9265</u>	<u>9526</u>	<u>9562</u>	<u><del>9625</del></u>	<u>9652</u>
					largest

Point out to the children that the color in the problems indicates where they are to put the sum of the ones' digits, the sum of the tens' digits, the sum of the hundreds' digits, and finally to add these partial sums to obtain the final sum.

Find the sums.



$\begin{array}{r} 643 \\ + 329 \\ \hline \end{array}$	$\begin{array}{r} 527 \\ + 248 \\ \hline \end{array}$
$\begin{array}{r} 15 \\ 60 \\ 900 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 60 \\ 700 \\ \hline \end{array}$
$972$	$775$

$\begin{array}{r} 356 \\ + 279 \\ \hline \end{array}$	$\begin{array}{r} 367 \\ + 578 \\ \hline \end{array}$	$\begin{array}{r} 496 \\ + 384 \\ \hline \end{array}$	$\begin{array}{r} 978 \\ + 765 \\ \hline \end{array}$
$\begin{array}{r} 15 \\ 120 \\ 500 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 130 \\ 800 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ 170 \\ 700 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ 130 \\ 1600 \\ \hline \end{array}$
$635$	$945$	$880$	$1743$



By using the small addition tables below, the children are essentially adding in the same manner as on text page g-17. The final sum of the row of partial sums gives the sum of the numbers at the right side of each table.

Find the sums and missing numbers.

500	20	6	→	526
300	40	2	→	342
↓	↓	↓	↓	↓
800	60	8	→	868

400	60	3	→	463
200	10	6	→	216
↓	↓	↓	↓	↓
600	70	9	→	679

700	30	7	→	737
200	50	2	→	252
↓	↓	↓	↓	↓
900	80	9	→	989

600	30	5	→	635
300	40	3	→	343
↓	↓	↓	↓	↓
900	70	8	→	978

1000	600	40	2	→	1642
2000	300	30	8	→	2338
↓	↓	↓	↓	↓	↓
3000	900	70	10	→	3980

3000	400	10	6	→	3416
4000	500	80	3	→	4583
↓	↓	↓	↓	↓	↓
7000	900	90	9	→	7999

Draw a figure that has .  
Can you name the figure?

3 sides altogether.  
No sides the same length.



triangle

4 sides the same length.  
4 square corners.



square

2 sides the same length.  
3 sides altogether.



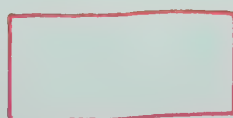
(isosceles) triangle

A square corner.  
3 sides altogether.



(right) triangle

2 pairs of sides the same length.  
4 square corners.



rectangle

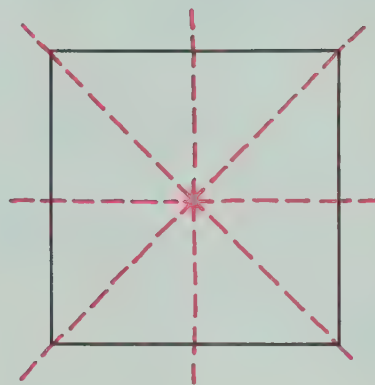
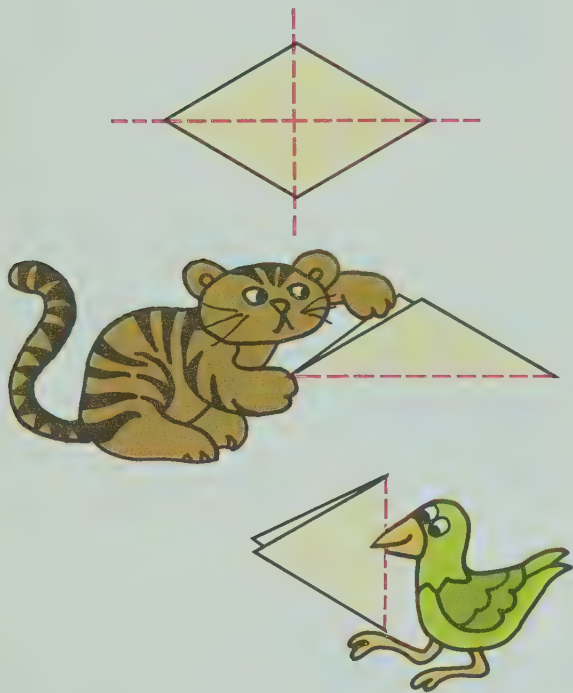
More than 4 sides.  
All sides the same length.

Possible answers:  
regular pentagon,  
regular hexagon,  
regular octagon,  
etc.

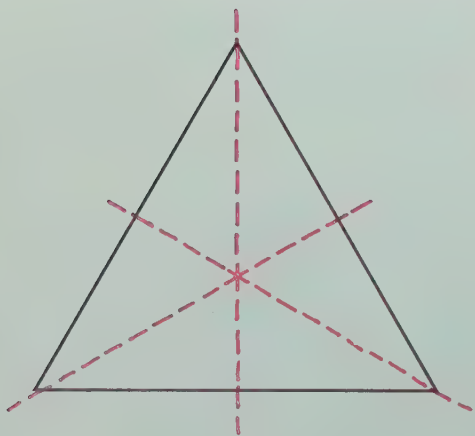


Have the children trace and cut out the square and the triangle. Then have them fold each figure in as many ways as possible so that both halves match exactly. Children may complete the last problem by first folding a piece of paper in half, cutting out a design, and then unfolding it. They can then draw a picture of the unfolded figure or paste their cutout in the space provided below.

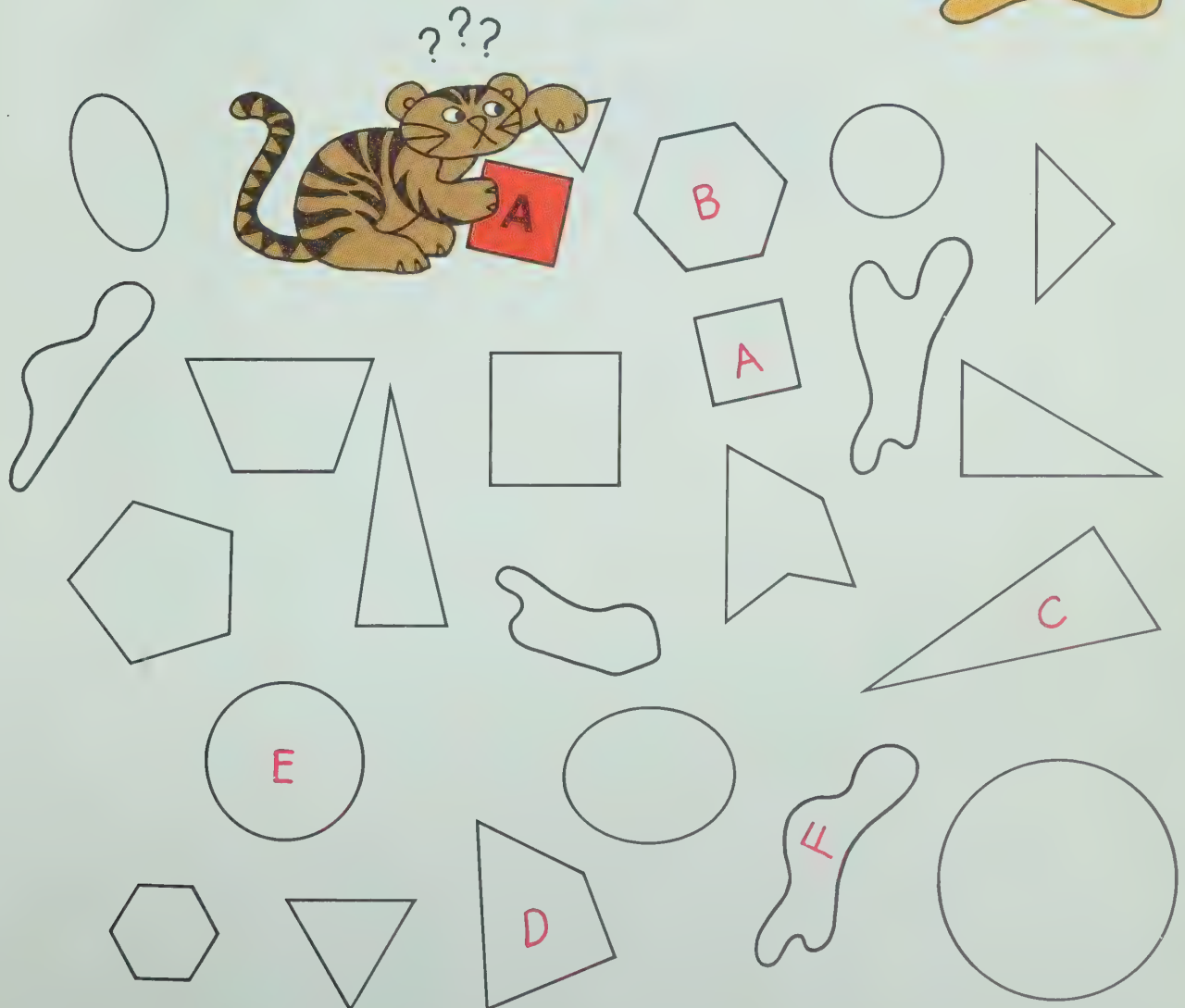
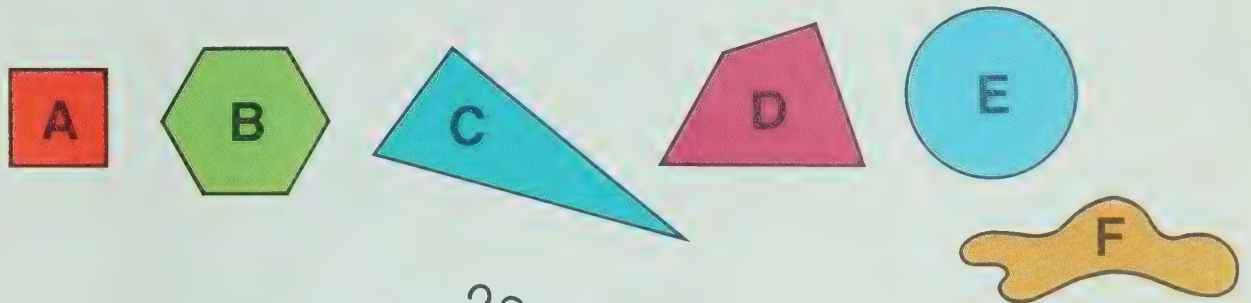
**Symmetric** figures can be folded along a line of symmetry so that both halves match exactly. Each figure below has more than one line of symmetry. Draw as many lines of symmetry as you can for each figure.



Draw a figure of your own that has a symmetry line.



**Congruent** figures are the same size and shape. Trace figures A, B, C, D, E, and F on another piece of paper. Use the tracing to find which figures below are congruent to them. Mark them with the same letter.





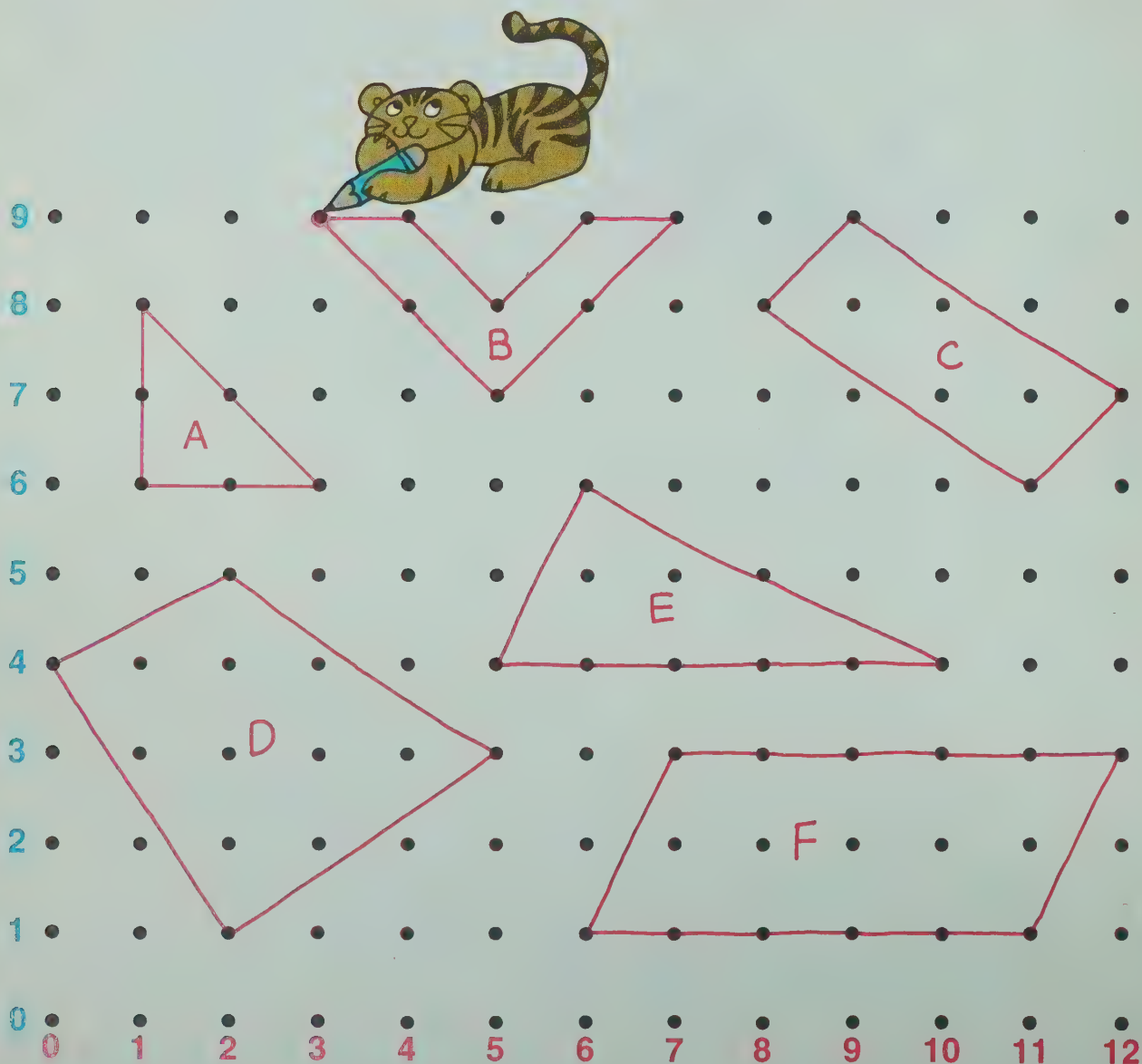
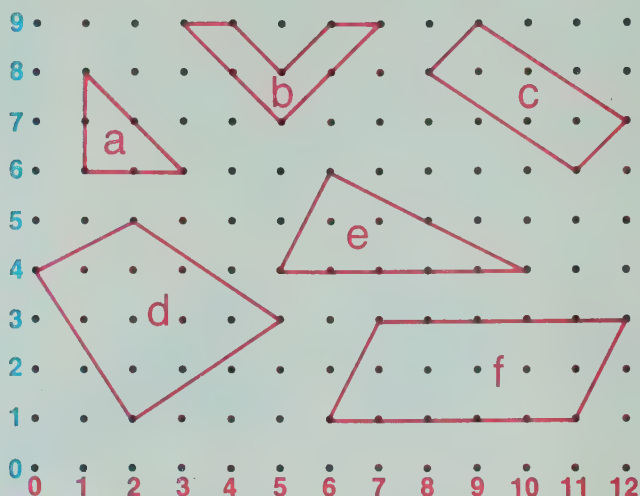
Show the children how the numbers on the left and lower sides of the grids can help them locate the vertices of each figure in the upper grid onto the wider-spaced dot grid below. For example, one of the vertices (or corners) of figure a is "one dot across and six dots up."

Figure **A** is **similar** to figure **a**.

On the grid below, draw figures similar to **b**, **c**, **d**, **e**, and **f**.

Put them in the same position.

Label your Figures **B**, **C**, **D**, **E**, and **F**.



Solve the equations.

Since  $5 + 4 = \boxed{9}$ ,

I know  $15 + 4 = \boxed{19}$ .

Since  $5 + 6 = \boxed{11}$ ,

I know  $15 + 6 = \boxed{21}$ .

Since  $7 + 5 = \boxed{12}$ ,

I know  $17 + 5 = \boxed{22}$ .

Since  $8 + 7 = \boxed{15}$ ,

I know  $28 + 7 = \boxed{35}$ .

Since  $9 + 6 = \boxed{15}$ ,

I know  $39 + 6 = \boxed{45}$ .

Since  $8 + 5 = \boxed{13}$ ,

I know  $58 + 5 = \boxed{63}$ .

Since  $25 + 5 = \boxed{30}$ ,

I know  $25 + 6 = \boxed{31}$ .

Since  $35 + 5 = \boxed{40}$ ,

I know  $35 + 7 = \boxed{42}$ .

Since  $25 + 10 = \boxed{35}$ ,

I know  $25 + 9 = \boxed{34}$ .

Since  $45 + 10 = \boxed{55}$ ,

I know  $45 + 8 = \boxed{53}$ .



Solve the equations.

Since  $9 - 5 = 4$ ,

I know  $19 - 5 = 14$ .

Since  $8 - 3 = 5$ ,

I know  $38 - 3 = 35$ .

Since  $25 - 5 = 20$ ,

I know  $25 - 6 = 19$ .

Since  $45 - 5 = 40$ ,

I know  $45 - 7 = 38$ .

Since  $35 - 10 = 25$ ,

I know  $35 - 9 = 26$ .

Since  $75 - 10 = 65$ ,

I know  $75 - 8 = 67$ .

Since  $12 - 5 = 7$ ,

I know  $22 - 5 = 17$ .

Since  $14 - 8 = 6$ ,

I know  $34 - 8 = 26$ .

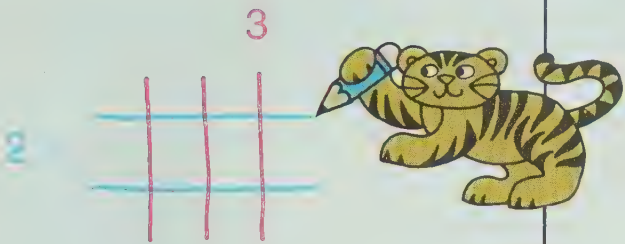
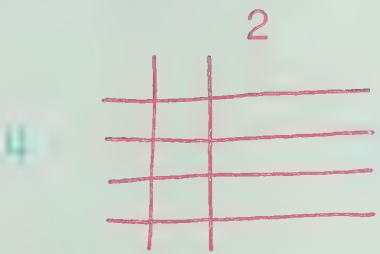
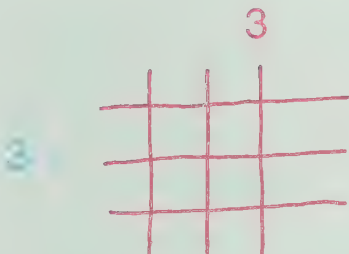
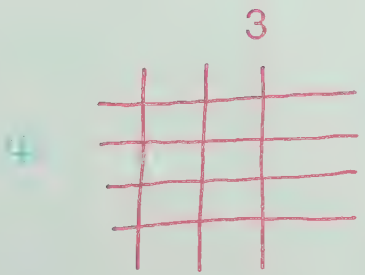
Since  $17 - 9 = 8$ ,

I know  $57 - 9 = 48$ .

Since  $16 - 7 = 9$ ,

I know  $86 - 7 = 79$ .

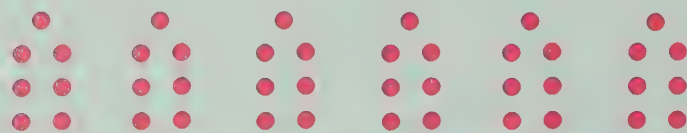
Distribute some red and blue strips of paper to the children so that they can experiment with them before they actually fill in the table. Later, urge them to pair off and combine their strips so that they can use them to find larger products such as  $7 \times 9$ .

Draw these lines Draw these lines	How many 's?	Multiplication equation
	6	$2 \times 3 = 6$
	8	$4 \times 2 = 8$
	9	$3 \times 3 = 9$
	12	$4 \times 3 = 12$
Make your own.		



Encourage the children to use counters, number-line jumping, and centimeter strips in order to find the sums and the products. The actual manipulation of objects will help them to grasp how addition and multiplication are related.

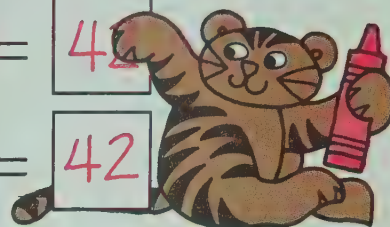
Find the sums. Then find the products.



$$7 + 7 + 7 + 7 + 7 + 7 = 42$$

How many  
sevens? →

$$6 \times 7 = 42$$



$$8 + 8 + 8 + 8 + 8 + 8 + 8 = 56$$

How many  
eights? →

$$7 \times 8 = 56$$

$$9 + 9 + 9 + 9 + 9 = 45$$

How many  
nines? →

$$5 \times 9 = 45$$

$$6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 = 48$$

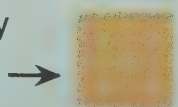
How many  
sixes? →

$$8 \times 6 = 48$$

Make your own.

How many

\_\_\_\_\_?



×

\_\_\_\_\_

=

=

Since the children have only been multiplying through the fives thus far, have them use any manipulatives they wish to find the products when multiplying by 6, 7, 8, and 9. After completing the table they should notice that any number times zero is zero, any number times one is that number, and that a different order of any two factors will give the same product (commutative principle).

How many products can you find?  
Write them in the table.

×	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9
2	0	2	4	6	8	10	$2 \times 6$ 12	14	16	18
3	0	3	6	9	12	15	18	21	24	27
4	0	4	8	12	16	20	24	28	32	36
5	0	5	10	$5 \times 3$ 15	20	25	30	35	40	45
6	0	6	12	18	24	30	36	42	48	54
7	0	7	14	21	28	35	42	49	56	63
8	0	8	16	24	32	40	48	56	64	72
9	0	9	18	27	36	45	54	63	72	81

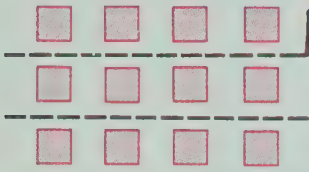
Do you see any interesting  
number patterns in the table?  
Color the squares to  
show these patterns.





Encourage the children to experiment with 12 counters to find as many equations as possible. There are 13 addition equations, 13 subtraction equations, and 6 multiplication equations that can be made.

How many different equations can you write about these 12 squares? If you can, draw lines in each picture of squares to show your thinking.

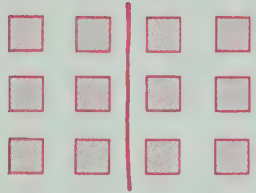


Sample answers are given.

$$3 \times 4 = 12$$



$$3 + 9 = 12$$

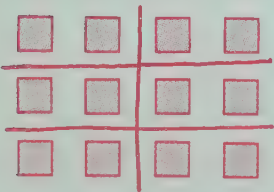


$$6 + 2 = 12 \text{ or}$$

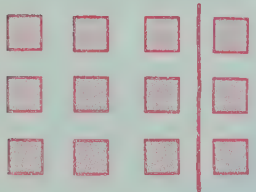
$$2 \times 6 = 12$$



$$4 \times 3 = 12$$



$$6 \times 2 = 12$$

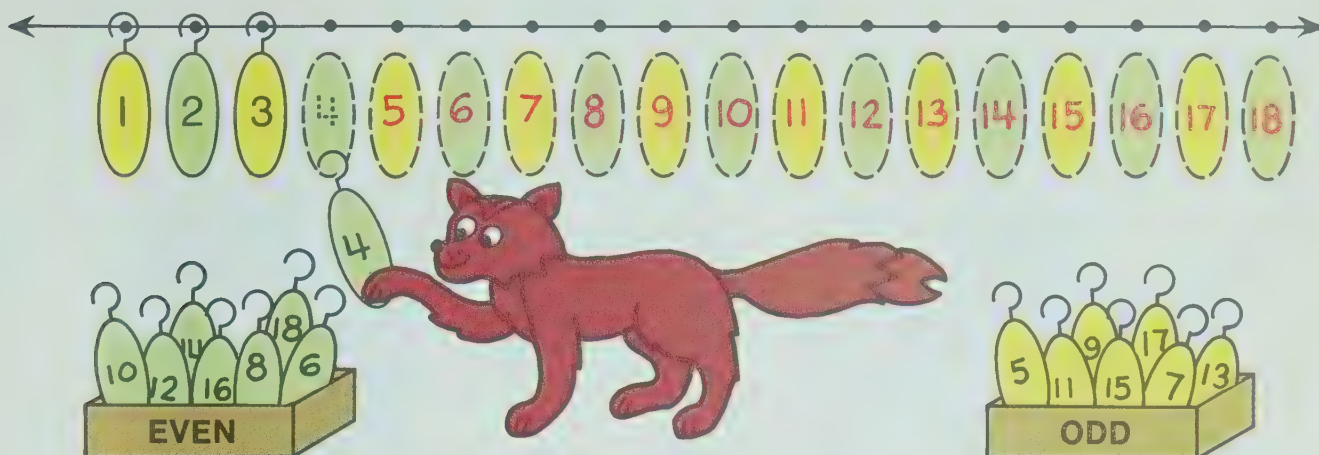


$$12 - 9 = 3$$

Use another sheet of paper if you find more.

To extend the first part of the lesson on this page have the children make a list of even numbers and a list of odd numbers beyond 18 so that they can discover that the even numbers end with a 0, 2, 4, 6, or an 8. After doing this and completing the tables, they should be able to identify even and odd numbers as well as to know if the sum of pairs of even or odd numbers will be even or odd.

Complete the number line.



Complete the addition tables.

+	1	3	5	7	9
1	2	4	6	8	10
3	4	6	8	10	12
5	6	8	10	12	14
7	8	10	12	14	16
9	10	12	14	16	18

+	2	4	6	8	10
2	4	6	8	10	12
4	6	8	10	12	14
6	8	10	12	14	16
8	10	12	14	16	18
10	12	14	16	18	20

The sum of two **odd** numbers is an even number.

The sum of two **even** numbers is an even number.

Is the sum of 43 and 39 **even** or **odd**? even

Is the sum of 546 and 398 **even** or **odd**? even

Is the sum of 7493 and 8697 **even** or **odd**? even



If the children are having difficulty completing the multiplication tables, give helpful hints and also encourage them to use any manipulatives in order to find the products. After the children complete this page, urge them to make a table (on another piece of paper) multiplying even numbers and odd numbers.

Complete the tables.

+	2	4	6	8	10
1	3	5	7	9	11
3	5	7	9	11	13
5	7	9	11	13	15
7	9	11	13	15	17
9	11	13	15	17	19

### Adding odd and even numbers

The sum of an odd number and an even number is

an odd number.

×	2	4	6	8	10
2	4	8	12	16	20
4	8	16	24	32	40
6	12	24	36	48	60
8	16	32	48	64	80
10	20	40	60	80	100

### Multiplying even numbers

The product of two even numbers is

an even number.

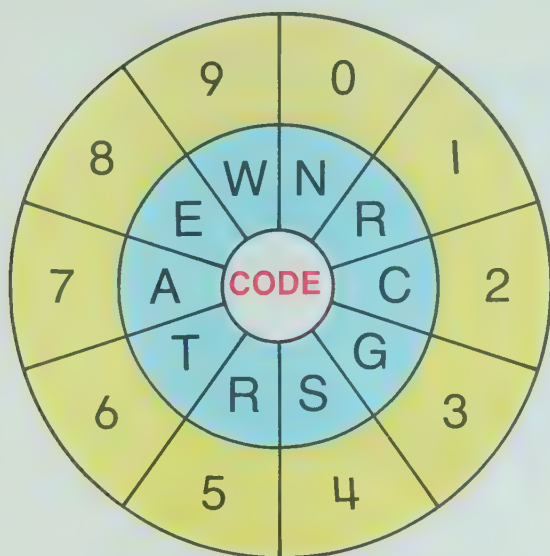
×	1	3	5	7	9
1	1	3	5	7	9
3	3	9	15	21	27
5	5	15	25	35	45
7	7	21	35	49	63
9	9	27	45	63	81

### Multiplying odd numbers

The product of two odd numbers is

an odd number.

Write the sum or difference on yellow.  
Use the code to put the letters on blue.



$$\begin{array}{r} 18 \\ - 9 \\ \hline 9 \\ \text{W} \end{array} \quad \begin{array}{r} 3 \\ + 5 \\ \hline 8 \\ \text{E} \end{array}$$

$$\begin{array}{r} 16 \\ - 9 \\ \hline 7 \\ \text{A} \end{array} \quad \begin{array}{r} 5 \\ + 0 \\ \hline 5 \\ \text{R} \end{array} \quad \begin{array}{r} 15 \\ - 7 \\ \hline 8 \\ \text{E} \end{array}$$

$$\begin{array}{r} 12 \\ - 9 \\ \hline 3 \\ \text{G} \end{array} \quad \begin{array}{r} 0 \\ + 1 \\ \hline 1 \\ \text{R} \end{array} \quad \begin{array}{r} 7 \\ + 1 \\ \hline 8 \\ \text{E} \end{array} \quad \begin{array}{r} 13 \\ - 6 \\ \hline 7 \\ \text{A} \end{array} \quad \begin{array}{r} 3 \\ + 3 \\ \hline 6 \\ \text{T} \end{array}$$

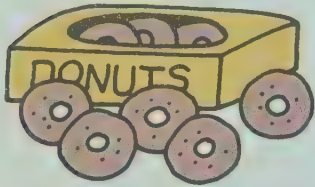
$$\begin{array}{r} 13 \\ - 9 \\ \hline 4 \\ \text{S} \end{array} \quad \begin{array}{r} 4 \\ + 4 \\ \hline 8 \\ \text{E} \end{array} \quad \begin{array}{r} 11 \\ - 9 \\ \hline 2 \\ \text{C} \end{array} \quad \begin{array}{r} 12 \\ - 7 \\ \hline 5 \\ \text{R} \end{array} \quad \begin{array}{r} 3 \\ + 5 \\ \hline 8 \\ \text{E} \end{array} \quad \begin{array}{r} 13 \\ - 7 \\ \hline 6 \\ \text{T} \end{array}$$



$$\begin{array}{r} 14 \\ - 7 \\ \hline 7 \\ \text{A} \end{array} \quad \begin{array}{r} 11 \\ - 8 \\ \hline 3 \\ \text{G} \end{array} \quad \begin{array}{r} 16 \\ - 8 \\ \hline 8 \\ \text{E} \end{array} \quad \begin{array}{r} 11 \\ - 11 \\ \hline 0 \\ \text{N} \end{array} \quad \begin{array}{r} 15 \\ - 9 \\ \hline 6 \\ \text{T} \end{array} \quad \begin{array}{r} 12 \\ - 8 \\ \hline 4 \\ \text{S} \end{array}$$



An equation and a picture are given. Write a short story problem to go with the picture and the equation. Finally, solve the equation. *Sample stories are given.*



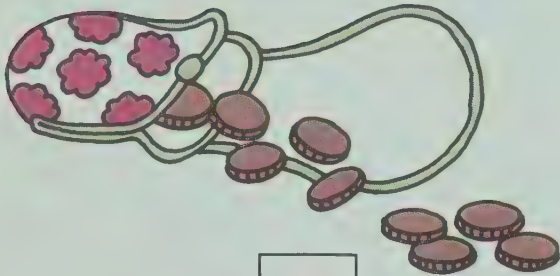
$$12 - 5 = \boxed{7}$$



Short story:

*Had 12 donuts.*

*Ate 5. How many left?*



$$17 - 9 = \boxed{8}$$

Short story:

*Saved 17 cents.*

*Spent 9 cents.*

*How much left?*



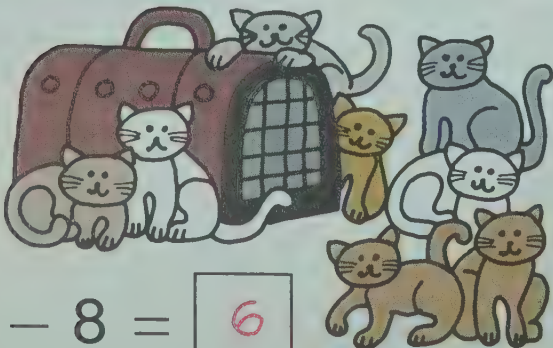
$$16 - 7 = \boxed{9}$$

Short story:

*Bought 16 cards.*

*Gave 7 to a friend.*

*How many left?*



$$14 - 8 = \boxed{6}$$

Short story:

*Owned 14 cats.*

*Sold 8 of them.*

*How many left?*

In this lesson, the centimeter strips are utilized to show the comparison of a unit strip with another (shorter) strip. The children should soon realize that if it takes  $x$  number of short strips to make up (match) the unit strips, then the shorter strip is  $1/x$  as long as the unit strip.

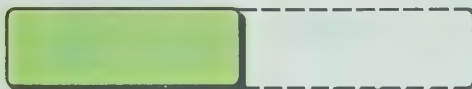
Write the fraction.

If



is 1,

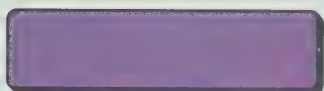
then



is  $\frac{1}{2}$ .



If



is 1,

then



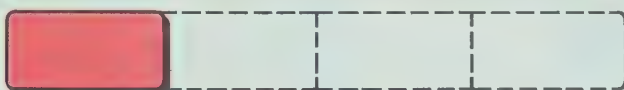
is  $\frac{1}{2}$ .

If is



is 1,

then



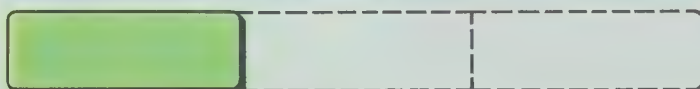
is  $\frac{1}{4}$ .

If



is 1,

then



is  $\frac{1}{3}$ .

If



is 1,

then

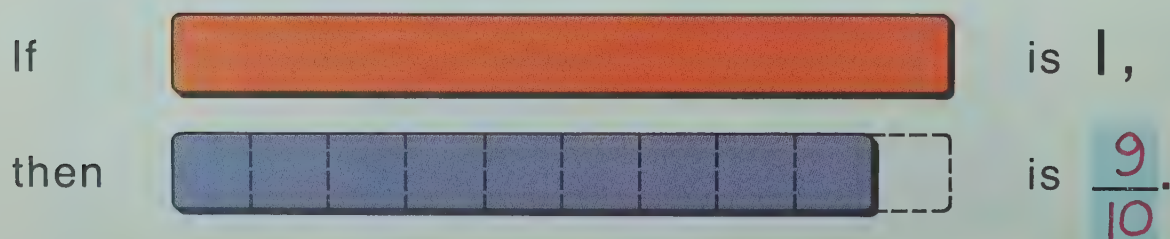
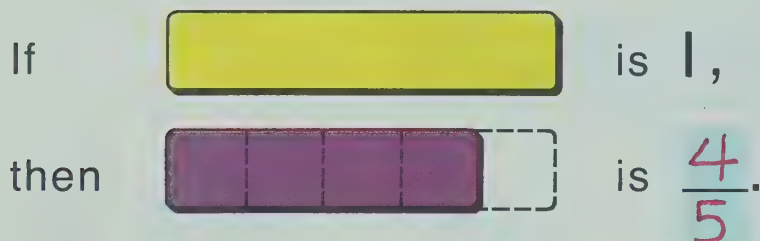
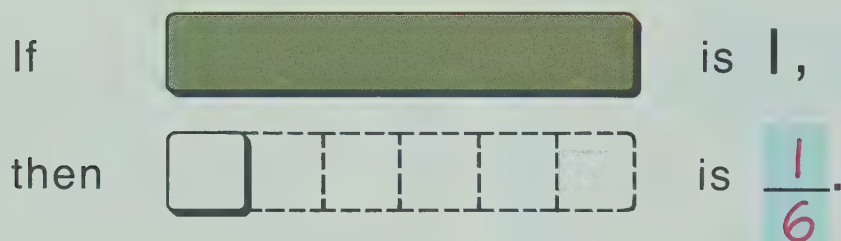
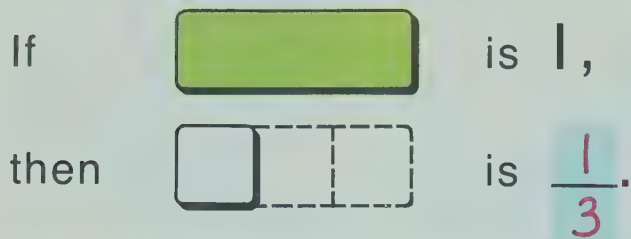


is  $\frac{1}{5}$ .



The illustrative examples should help children see that the length of the shorter strip corresponds to the numerator and the length (number of one-unit white strips) of the "1" strip corresponds to the denominator. In the fifth frame, the red strip markings are used so that the fraction can be given in lowest terms.

Write the fraction.

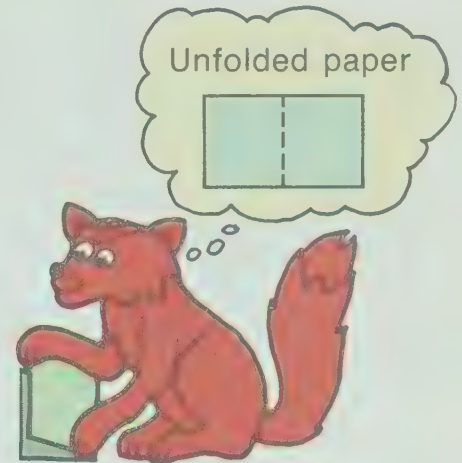


Follow the directions.

Fold a piece of paper once.

Unfold it. How many  
parts do you see? 2

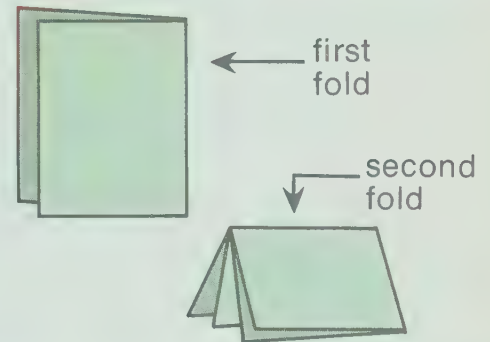
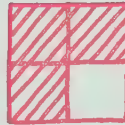
Color the paper to show  $\frac{1}{2}$ .



Fold a piece of paper twice.

Unfold it. How many  
parts do you see? 4

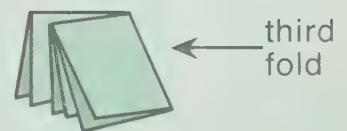
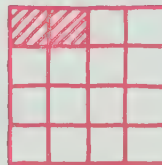
Color the paper to show  $\frac{3}{4}$ .



Fold a piece of paper three times.

Unfold it. How many  
parts do you see? 16

Color the paper to show  $\frac{1}{8}$ .



Fold another piece of paper three  
times. Unfold it.

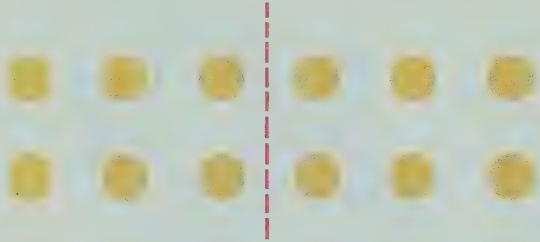
Color the paper to show a fraction.

What fraction did you show? \_\_\_\_\_

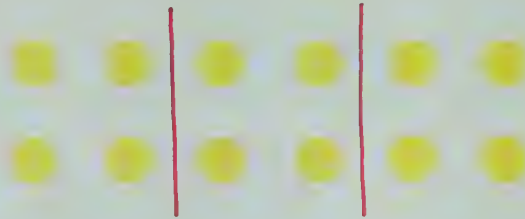


Suggest that the children use the "sharing" technique to do each of the problems. For example, to divide a set of 12 objects into thirds, have them pretend that they are sharing the objects with two other friends.

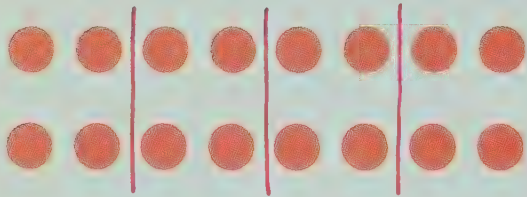
Divide each set into halves, thirds, fourths, fifths, or sixths. Then complete each sentence.



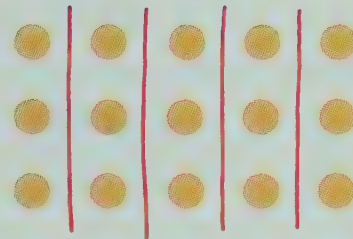
One half of 12 is 6.



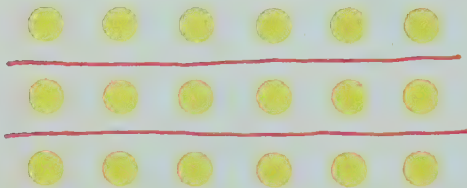
One third of 12 is 4.



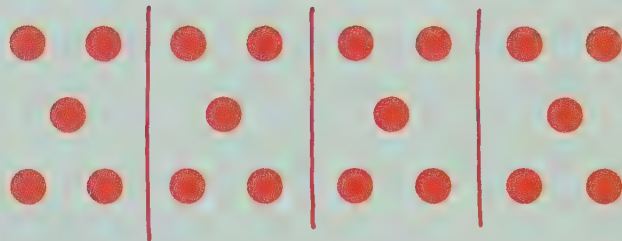
One fourth of 16 is 4.



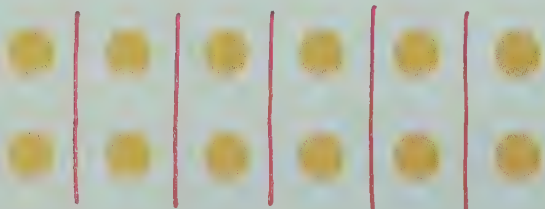
One fifth of 15 is 3.



One third of 18 is 6.



One fourth of 20 is 5.

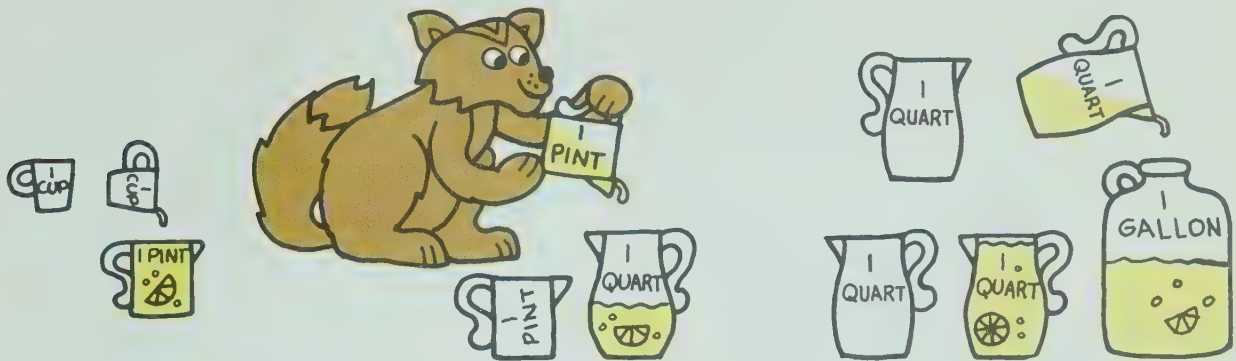


One sixth of 12 is 2.

Make your own

One \_\_\_\_\_ of \_\_\_\_\_ is \_\_\_\_\_.

It would be extremely advantageous to have the containers and some sand in the classroom so that the children could perform an experiment for each (or at least some) problem. This would reinforce their understanding about volume as well as with fractions.



Use the pictures above or real containers to complete the sentences. Write a whole number in each   .

Write a fraction in each   .

It takes 2 cups to fill a pint.

A cup is  $\frac{1}{2}$  of a pint.

It takes 2 pints to fill a quart.

A pint is  $\frac{1}{2}$  of a quart.

It takes 4 quarts to fill a gallon.

A quart is  $\frac{1}{4}$  of a gallon.

It takes 4 cups to fill a quart.

A cup is  $\frac{1}{4}$  of a quart.

It takes 8 pints to fill a gallon.

A pint is  $\frac{1}{8}$  of a gallon.

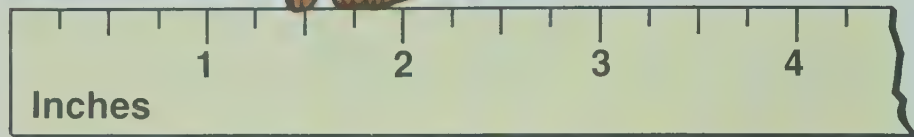
It takes 16 cups to fill a gallon.

A cup is  $\frac{1}{16}$  of a gallon.

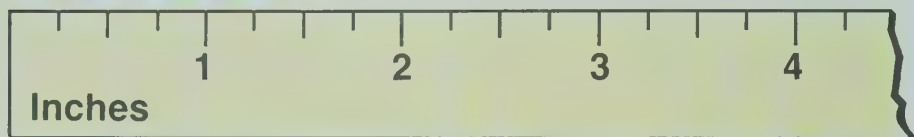


Point out to the children that the shortest markings on the ruler are quarter inch marks and the slightly longer ones are half inch marks. As you can see, the right end of the safety pin is closest to first quarter inch mark beyond the one inch mark, or it is  $1\frac{1}{4}$  inches long.

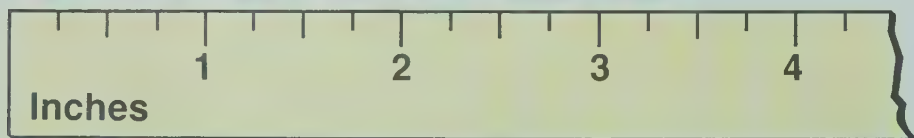
Measure the object above each ruler.  
Give a whole number for each  
and a fraction for each — .



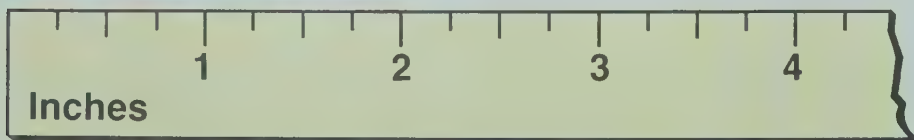
$1$  and  $\frac{1}{4}$   
inches long



$1$  and  $\frac{1}{2}$   
inches long

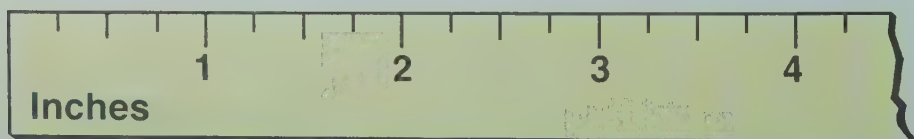


$3$  and  $\frac{1}{2}$   
inches long



$2$  and  $\frac{1}{4}$   
inches long

Find an object of your own to measure.



$\square$  and  $\square$   
inches long

Find the sums.

$$\begin{array}{r} 345 \\ + 438 \\ \hline 783 \end{array}$$

$$\begin{array}{r} 276 \\ + 418 \\ \hline 694 \end{array}$$

$$\begin{array}{r} 527 \\ + 269 \\ \hline 796 \end{array}$$

$$\begin{array}{r} 324 \\ + 949 \\ \hline 1273 \end{array}$$

$$\begin{array}{r} 272 \\ + 483 \\ \hline 755 \end{array}$$

$$\begin{array}{r} 196 \\ + 452 \\ \hline 648 \end{array}$$

$$\begin{array}{r} 567 \\ + 385 \\ \hline 952 \end{array}$$

$$\begin{array}{r} 568 \\ + 779 \\ \hline 1347 \end{array}$$

$$\begin{array}{r} 13 \\ 36 \\ + 48 \\ \hline 97 \end{array}$$

$$\begin{array}{r} 24 \\ 35 \\ + 47 \\ \hline 106 \end{array}$$

$$\begin{array}{r} 32 \\ 47 \\ + 63 \\ \hline 142 \end{array}$$

$$\begin{array}{r} 18 \\ 51 \\ + 67 \\ \hline 136 \end{array}$$

$$\begin{array}{r} 26 \\ 57 \\ + 24 \\ \hline 107 \end{array}$$

$$\begin{array}{r} 56 \\ 37 \\ + 72 \\ \hline 165 \end{array}$$

$$\begin{array}{r} 49 \\ 65 \\ + 27 \\ \hline 141 \end{array}$$

$$\begin{array}{r} 86 \\ 75 \\ + 48 \\ \hline 209 \end{array}$$

Make up five addition problems.  
Ask a friend to find the sums.



The problems in the first row involve regrouping with tens and ones and in the second row, hundreds and tens. But, in the third row, regrouping is required involving hundreds, tens, and ones. Therefore, it would be wise to work through a few problems of that type before assigning that row.

Find the differences.

$$\begin{array}{r} 852 \\ - 327 \\ \hline 525 \end{array}$$

$$\begin{array}{r} 743 \\ - 218 \\ \hline 525 \end{array}$$

$$\begin{array}{r} 964 \\ - 446 \\ \hline 518 \end{array}$$

$$\begin{array}{r} 687 \\ - 239 \\ \hline 448 \end{array}$$

$$\begin{array}{r} 839 \\ - 454 \\ \hline 385 \end{array}$$

$$\begin{array}{r} 726 \\ - 273 \\ \hline 453 \end{array}$$

$$\begin{array}{r} 948 \\ - 475 \\ \hline 473 \end{array}$$

$$\begin{array}{r} 637 \\ - 492 \\ \hline 145 \end{array}$$

$$\begin{array}{r} 924 \\ - 567 \\ \hline 357 \end{array}$$

$$\begin{array}{r} 835 \\ - 269 \\ \hline 566 \end{array}$$

$$\begin{array}{r} 851 \\ - 481 \\ \hline 370 \end{array}$$

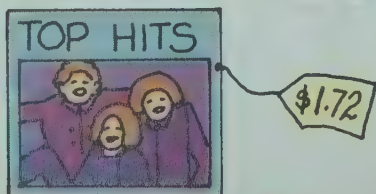
$$\begin{array}{r} 635 \\ - 297 \\ \hline 338 \end{array}$$

## Short stories

Had \$4.95:



Bought:



How much money left? \$3.23

Had \$6.66:



Bought:



How much money left? \$2.37

Before children begin this lesson, set aside a day or two to talk about temperature and thermometers. Bring various models into the classroom. Since the children are more familiar with temperature in terms of *degrees Fahrenheit*, show them pictures of both types of thermometers side by side.

The centigrade thermometer is often used where people use the metric system of measurement.

Draw a line to show each temperature on the thermometer.

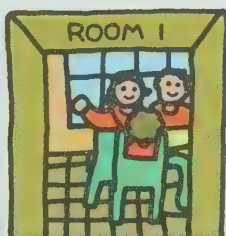
Boiling  
water

100° above 0



Classroom  
temperature

20° above 0



High  
fever

39° above 0



Very cold  
day

20° below 0

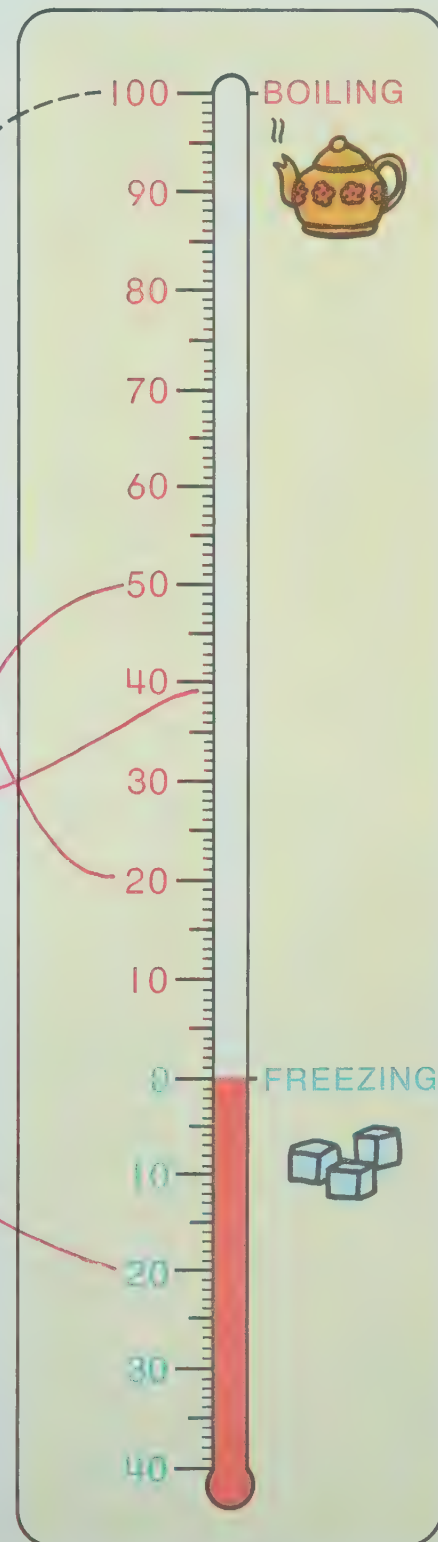


Hot  
bath

50° above 0



## CENTIGRADE THERMOMETER





If the children understand the mechanics of "jumping" on the number line, they should have no difficulty with this lesson. However, check to see that they are making the jumps in the proper direction. Encourage the children to make up games about this lesson.

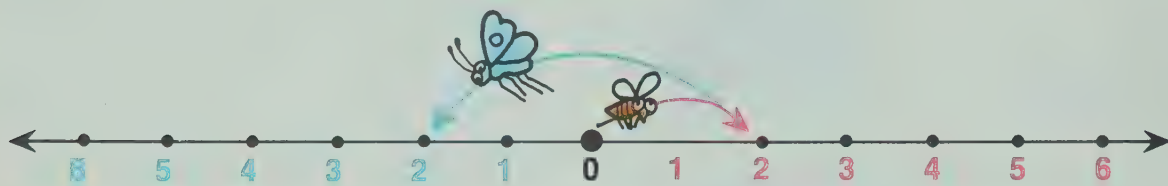
Here is a new picture of the number line.



Think of the blue numerals as "below 0".

Think of the red numerals as "above 0".

Start at 0. Jump 2, then 4. Where did you end? 2



Use colored pencils to show your answers.

If the answer is "below 0", use blue.

If the answer is "above 0", use red.



Start at 0. Jump 2, then 1. End at 1 (red)



Start at 0. Jump 2, then 3. End at 1 (red)




Start at 0. Jump 2, then 4. End at 6 (blue)

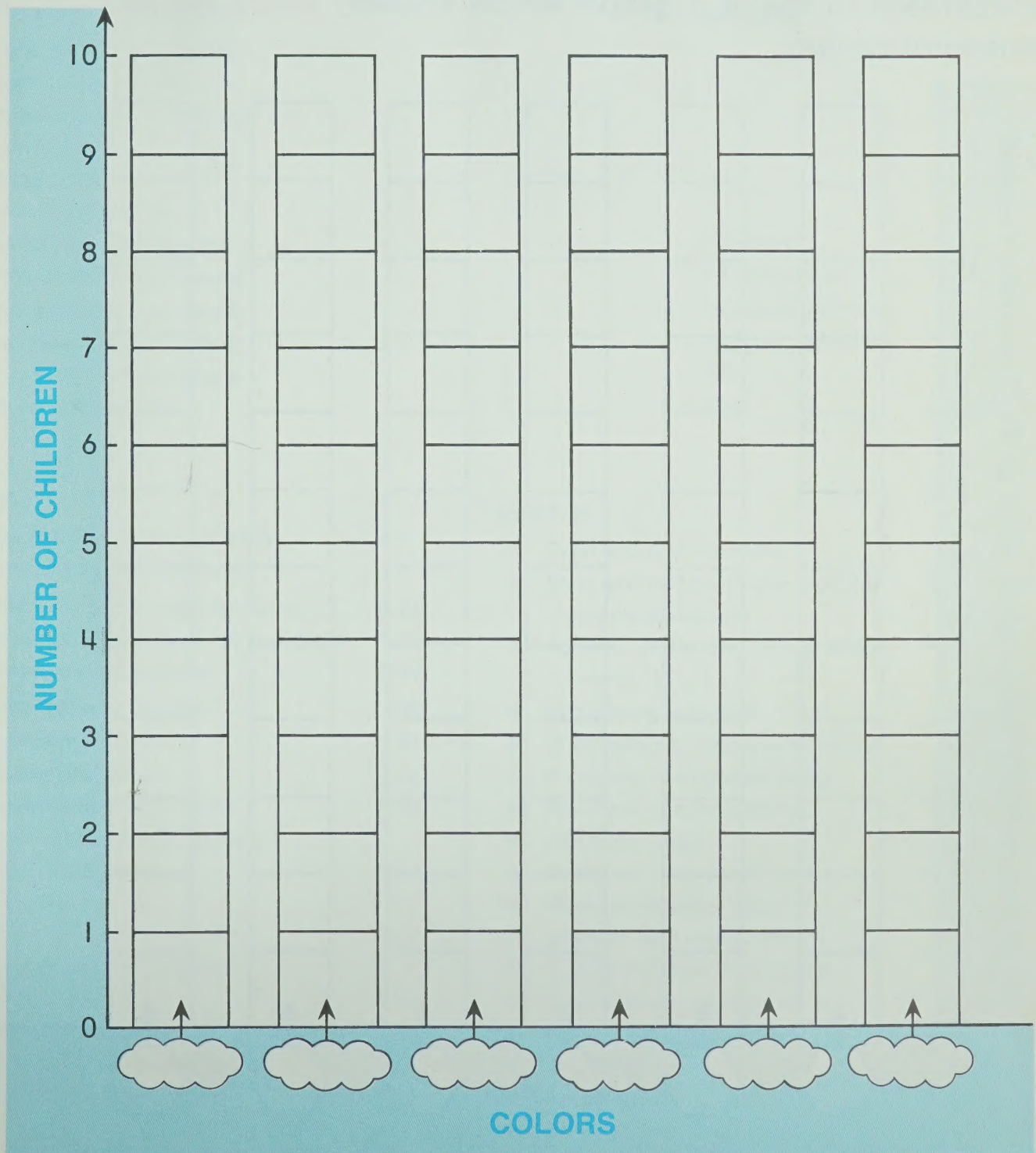


Start at 0. Jump 4, then 3. End at 1 (blue)


You may wish to go through an example with the children if they have never recorded information on a graph before. Put a graph similar to the one below on the chalkboard. Plan to ask the children about their favorite candy or anything  
*continued on next page*

Choose 6 colors and color each  below.  
Ask your classmates which of the colors  
they like best.

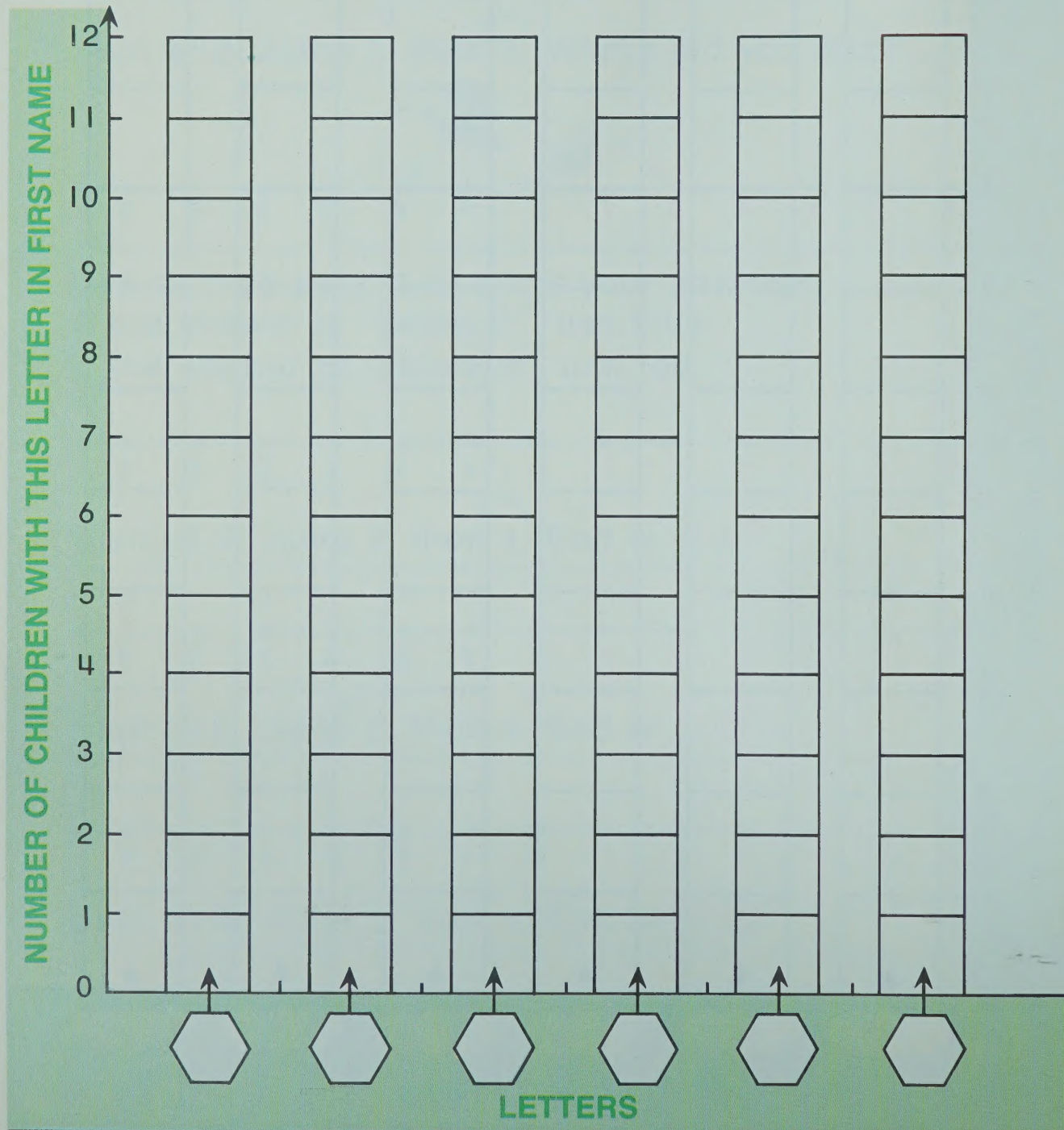
Then color one square for each classmate to make a graph which shows the information. *Answers depend on child's survey.*





Choose 6 letters of the alphabet.  
Write one of them in each  below.  
How many classmates have each letter  
in their first name?  
Write a letter in a <sup>RE</sup>square for each  
classmate to make <sup>CU</sup>a graph which shows  
the information.

Answers depend on  
child's survey.







\*000028386357\*

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6	Inequalities (3-digit numerals)	e-22
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